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MEMOIRS

ON THE

COLEOPTERA

BY

THOS. L. CASEY

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I—STUDIES IN THE CICINDELIDÆ AND CARABIDÆ OF AMERICA.

Our Cicindelidæ have been considered more or less seriously by a number of authors recently, but the Carabidæ have been singularly neglected—even those genera composed of conspicuous species. No good tabular key to the species of *Carabus* or *Calosoma*, as represented in our fauna, has ever been published, and there is no evidence to show that the material in most of our rather numerous collections has been so much as carefully observed or accurately segregated into specific forms. No new *Nebria* has been brought to notice for nearly a generation and the same statement can be made regarding numerous other important genera. All this points only too clearly to the paucity of workers and the vast field that there is to cover. The active describers and classifiers of our Coleoptera as a life specialty, from Thomas Say to the present time, could be counted on the fingers of both hands, with some to spare. It is very remarkable that a subject so fascinating, so broadening to the mind and withal so accessible to everyone, should be so disregarded, ignored or even ridiculed by the vast majority of educated mankind.

CICINDELIDÆ.

Omus Esch.

Leaving out of consideration for the present the four very distinct species *dejeani*, *submetallicus*, *vandykei* and *ambiguus*, the last three of which I do not know in nature, the remaining described forms may be assigned to eleven groups, each of which conforms in general characters and habitus to a well defined species forming the primary type of the group and including other forms which may be considered subspecific in some cases; these eleven type species are *californicus*, *audouini*, *borealis*, *lecontei*, *edwardsi*, *punctifrons*, *sequoiarum*, *horni*, *parvicollis*, *intermedius* and *lævis*. The *californicus* group includes also the subspecies *sculptilis* Csy. The *audouini* group includes also *parvulus* n. subsp. The *borealis* group

includes in addition *mimus* Csy., *humeroplanatus* W. Horn and *oregonensis* described below. The *lecontei* group contains in addition *elongatus*, *dunni*, *regularis* and *maritimus* Csy., and *fuchsi* W. Horn, the last of which I have not seen and possibly may have redescribed under some one of the other names; *regularis* may perhaps be the same as *lecontei*, but it does not conform very well with the description; I do not know the precise taxonomic status of the various forms or of those attached to the following group. The *edwardsi* group will comprise also *montanus*, *lucidicollis*, *brunnescens* and *lobatus* Csy. The *punctifrons* group contains small forms, of which also *confluens*, *fraterculus* and *degener* Csy., have been defined. The *sequoiarum* group includes also *lugubris* Csy., with subspecies *sierricola* defined below. The *horni* group includes besides that species *collaris* and *compositus* Csy. The *parvicollis* group includes also *procerus* Csy., and the one defined below under the name *spissipes*. The *intermedius* group comprises in addition *cribripennis* and *blaisdelli* Csy., one of which may be the true *intermedius*, as I have not seen the type of that species. Finally, the *lævis* group includes *tularensis* Csy., of specific value, to which is to be attached *gracilior* as a subspecies.

Omus audouini ssp. **parvulus** nov.—Similar to *audouini* but smaller, anteriorly more slender and with shorter and more slender antennæ, the last palpal joint shorter; head and labrum similar, the front smoother, with the sparse punctures more evident; prothorax similar in general form and lateral convexity but with the vermiculate sculpture almost completely obsolete laterally as well as medially; elytra nearly similar but with rather closer and feebler sculpture, the foveæ less evident, tarsi more slender, the posterior much more notably exceeding the tibiæ in length; copulatory spicule bent, flattened and rather broad apically. Length (♂) 13.0 mm.; width 4.5 mm. Oregon (locality not recorded).

The relatively much longer hind tarsi, small size, more slender form, shorter and more slender antennæ and nearly smooth pronotum, are features which will render this form very easily identifiable among the allies of *audouini*.

Omus oregonensis n. sp.—Body in sculpture resembling *mimus* Csy., but much shorter in form; head and labrum similar, the eyes not quite so prominent; prothorax similar and deeply vermiculato-rugose throughout but evidently wider than the head, and not subequal in width to the latter as it is in *mimus;* elytra much shorter, evenly oval, widest at the middle, the sculpture nearly similar but not quite so strong; legs not so stout, the anterior femora much thinner; copulatory spicule apically

rather narrow and forming an even arc from the bulbous part to the tip. Length (♂) 13.0 mm.; width 5.0 mm. Oregon (Josephine Co.). Nunenmacher.

This is the species that was erroneously identified by Dr. W. Horn as *mimus*. It is not only more abbreviated and with relatively smaller head, less convex eyes and very much shorter elytra, but differs conspicuously in the form of the copulatory spicule, which in *mimus* has the apical part broader, shorter, perfectly rectilinear and parallel-sided from the bulbous part to the tip. It is for this reason that I am forced to regard *oregonensis* as a species and not as a subspecies of *mimus*.

Humeroplanatus is closely allied to *borealis* but is sufficiently distinct in its more abbreviated, less convex form, more rounded sides of the prothorax, rather shorter antennæ and less convex, more gradually declivous and much less sculptured humeral region of the elytra; the general sculpture of the latter also is feebler and sparser, especially toward the suture. This *borealis* group is more northern in distribution and does not spread far to the southward in California; my series of four examples of *humeroplanatus* was collected by Nunenmacher in Del Norte Co.; all the others are from Oregon.

Omus lugubris ssp. **sierricola** nov.—Form nearly as in *lugubris* but with relatively smaller head and prothorax and evenly oblong-oval, broader elytra, widest at the middle and evidently less coarsely punctate. Length (♂) 17.0 mm.; width 6.5 mm. California. Levette collection.

This is the second specimen of the two serving as the original types of *lugubris* (Ann. N. Y. Acad. Sci., IX, p. 290); it evidently represents a distinct form. The head and prothorax in *lugubris* are much larger when compared with the hind body, more nearly as in *sequoiarum*, from which it differs in having the elytra widest well before the middle and thence gradually, arcuately tapering to the apex. In *lugubris* the acute lateral margins of the pronotum attain the base, while in *sierricola* they end abruptly a long distance from the base.

Omus spissipes n. sp.—Form somewhat as in *parvicollis* but larger, stouter and more ventricose, deep black, subalutaceous; head and labrum as in that species, except that the labrum is more rectilinearly truncate, the sublateral sinuations very feeble; mandibles stouter; prothorax similar in form but larger and much more distinctly vermiculato-rugose, the

acute lateral margins fully attaining the base; elytra similarly elongate, convex and widest behind the middle, the slightly converging sides feebly and evenly arcuate thence to the base, without humeri, more rapidly rounding and converging behind; punctures small, feeble and sparse, a little stronger and less sparse laterally; legs stouter, third joint of the hind tarsi barely three times as long as wide. Length (♂) 19.5 mm.; width 6.6 mm. California (Tulare Co.)—without more definite record.

Differs from *parvicollis* in its larger size, more obovoidal hind body, stouter mandibles, larger prothorax, with the converging sides in basal half straight, and in the stouter legs and tarsi, the legs being similarly notably long however. The large female noted under my description of *parvicollis* is the female of *procerus* Csy.

Dromochorus Guér.

It is difficult to understand how the species that I described under the name *sericeus* could have been united with *belfragei*. Its much shorter and broader form and deep clear-cut punctures of the elytra, impart so radically different a habitus that only surmise and conjecture on the part of those not knowing the species could have led to that conclusion. As to *pruininus*, the very conservative might consider it a subspecies of *belfragei*, but the much larger size, very much stouter form and evident purple bloom, wanting in *belfragei*, would, at any rate, make it a very distinct subspecies—by no means a synonym.

Cicindela Linn.

The species described by Mr. Leng under the names *robusta* and *bowditchi* are wholly unknown to me and are decidedly doubtful as to position in the series; they evidently do not belong together, but I can state nothing further at present. The other species can be assigned to the following 35 groups, which coincide generally with those defined by Mr. Leng though with some departures in sequence or organization, as will be noted. No attempt has been made to indicate the taxonomic rank of the names given under the various groups; they are however all species or subspecies and synonyms are not included; those to be described further on in the present paper are indicated by an asterisk.

1—*Celeripes* group.

Comprises so far as known only *celeripes* and *cursitans* of LeConte.

2—*Unipunctata* group.

Consists of *unipunctata* Fabr. alone. Mr. Leng gives no record of its flying and my material is too scanty to ascertain the development of the wings; they are probably vestigial to some extent.

3—*Obsoleta* group.

Composed of *obsoleta* Say, *vulturina* and *prasina* Lec., and *santaclaræ* Bates. The last is a good species, distinct from *vulturina* in having the fascia very much less oblique and with the outer and inner ends much more swollen; both of these are strong fliers but *prasina* probably has less developed wings. The size throughout is unusually large.

4—*Longilabris* group.

This group is well defined and consists of *longilabris* Say, *montana* Lec., *albilabris* Kirby, *perviridis* and *laurenti* Schaupp., *oslari* and *vestalia* Leng, *nebraskana* Csy., *spinitarsis**, *canadensis**, *ostenta**, and *placerensis**. The allies of *longilabris* are numerous and the group was less carefully elaborated by Mr. Leng than some others; for example, it does not seem to have occurred to the author that the formation of the labrum is different in the male and female. In this group the tip is usually tridentate in the male, with the lateral teeth broader and more obtuse and purely unidentate in the female, though this rule by no means applies to the entire family; here for instance it is more dentate in the male than in the female as a rule, while in some other groups, such as *rufiventris*, it is the female that has the more strongly dentate labrum. *Nebraskana* is a subspecies of *montana* and has the labrum similarly black in the female and white in the male; the body is however smaller and more slender and the antennæ less stout than in *montana* and it occurs at lower elevations and more especially in the prairie country. The coloration of the labrum appears to be important, but Mr. Leng does not seem to have associated it with sex and implies that it is therefore a very inconstant and unreliable character; more material than I have at present would be desirable however in order to arrive at a satisfactorily final conclusion.

5—*Sexguttata* group.

Resembles the preceding very strikingly in facies, in the hairless front in both sexes, well developed tarsi, form of maculation and in many other features, but differs in the shorter labrum and finer, feebler sculpture. It comprises *sexguttata* and *violacea* Fabr., *patruela* and *consentanea* Dej., *harrisi* Leng and *levettei* and *tridens* Csy. *Tridens* is the immaculate bright pure green form found at Onaga, Kansas; it differs from the immaculate forms of *levettei*, which occur especially in the south, in its shorter and broader outline. The true *violacea* I have not seen; it may possibly be one of the *scutellaris* group.

6—*Nigrocærulea* group.

I would associate together in this group *nigrocærulea* Lec. and *feminalis*, *triplicans*, *snowi*, *velutoidea*, *tumidifrons*, *filitarsis* and *aterrima* Csy., also *townsendi*;* probably *viatica* Chev., *euthales* Bates, of Durango, Mexico, and other similar forms are to be included also. The elytral sculpture is always feeble, often obsolescent, the tarsi long, the front generally bald in both sexes, the size of the body small or moderate, the elytral apices non-serrulate and the pale maculation wanting or small and disconnected. The taxonomic forms, whether species or subspecies, are numerous, but individuals are comparatively very rare in collections; the types of *tumidifrons*, *filitarsis* and *aterrima* are from Chihuahua.

7—*Scutellaris* group.

This is a well defined group, in which the body becomes unusually short and stout in build, the front pubescent in the male, the elytral punctures nearly obsolete and the tarsi only moderate in length. The species and subspecies are *scutellaris* Say, *rugifrons*, *modesta* and *unicolor* Dej., *lecontei* Hald., *nigrior* Schaupp and *criddlei**. No one seems to know as yet the true relationships of these various developments, but it should be said that they hold as truly to the typical form and coloration in each case as do the species of any other natural group. There is nothing to be gained and much complication of our nomenclature to be incurred by considering them, provisionally at least, as anything else than species. The same remark applies to other groups such as *purpurea* and *blanda*.

8—*Pulchra* group.

A small group, having many of the characters of the preceding, being almost glabrous and with variable front in regard to pubescence, but the tarsi are unusually long and the body narrower and more elongate; the elytra are generally immaculate and peculiarly sculptured, the punctures distinct basally but rapidly becoming obsolete posteriorly. The species so far as known are *pulchra* Say, *pimeriana* Lec. and *horni* Schaupp, also the Mexican *ritteri* Bates.

9—*Fulgida* group.

In this group the body is of moderate or small size, with fine and moderate to feeble sculpture, short labrum and more or less pubescent front, generally in both sexes; it is principally distinguished as a group, however, by the unusually short tarsi, *fulgida* itself being the least typical of all in this respect. The group includes *fulgida* Say, *willistoni*, *latesignata* and *hyperborea* Lec., *limbigera* G. & H. (*limbata* Say—præocc.), *senilis* G. H. Horn, *pseudosenilis* W. Horn, *tenuicincta* Schaupp, *cochisensis*—the only immaculate form—*echo* and *amadeensis* Csy., *lantzi* E. D. Harris, as well as *nympha** and *obliviosa**. These species and subspecies are distributed among a number of small groups by Mr. Leng, but this seems to be unnecessary, as there are strong bonds of affinity among them, especially in general style of ornamentation, sculpture and tarsal structure; there is however marked diversity in external habitus.

10—*Pusilla* group.

A group of small species, one of the chief peculiarities of which is the tendency to unusual elongation of the humeral lunule; in most of its other characters however it reproduces the preceding group in great measure. The species are *pusilla* and *terricola* Say, *cinctipennis*, *cyanella* and *imperfecta* Lec., *lunalonga* Schaupp and *tuolumnæ* Leng. Mr. Woodgate sent me a very large series of *cinctipennis*, from Jemez Springs, New Mexico, nearly all of which are of a dull coppery-brown color, contrasting in this respect with a series from Dakota and Montana, all of which are dull green. I have not seen *pusilla*, *terricola*, *cyanella* or *lunalonga*, but have the others. *Tuolumnæ* is a true species and not a variety.

11—*Purpurea* group.

This is a very large section of the genus, characterized by a rather broad, moderately convex, distinctly and evenly sculptured body, with moderate labrum, hairy front in both sexes, more metallic and smoother elytral side-margins, well developed tarsi and rather deficient maculation as a rule, this only very rarely expanding along the sides to form an entire white margin as in *cimarrona*, seen in an incipient stage in *auguralis*. This and the two following groups exhibit a progressive posterior inflexion of the humeral lunule, scarcely at all evident here, more pronounced in *formosa* and very pronounced in *tranquebarica*. The forms attachable to the *purpurea* group are *purpurea* Oliv., extending from the Atlantic coast to the plains of Kansas but replaced by other forms in the Rocky Mountains, *decemnotata* Say, *splendida* Hentz, *limbalis* Klug, *amœna*, *spreta*, *auduboni* and *cimarrona* Lec., *graminea* Schaupp, *transversa*, *ludoviciana* and *sierra* Leng, *lauta* and *denverensis* Csy., and including some less pronounced forms, *auguralis**, *ardelio**, *franciscana**, *inducta**, *awemeana**, *eldorensis** and *albertina**. *Denverensis* and *sierra* form a very distinct subgroup and are pronouncedly distinct species, not at all closely allied to any others; the penultimate joint of the labial palpi is wholly pale in the male of both, which withdraws them widely from the more typical species, but in *limbalis* this joint is also pale or piceous in the male, though black in the allied *awemeana*. *Sierra* was placed among the allies of *tranquebarica* by Leng but in my opinion incorrectly.

12—*Formosa* group.

The less numerous species of this group have most of the characters of the preceding but with a more developed labrum, except in *admiscens*, plumper body in one section, a more convex upper surface, with broad white lateral margins and more inflexed humeral lunule. The various forms are *formosa* Say, *generosa* Dej., *venusta* Lec., *manitoba* Leng and *luxuriosa**, *versuta**, *gracilenta** and *admiscens**. *Latesignata* and *tenuicincta* placed here by Leng belong very evidently with the *fulgida* and *willistoni* series, not only because of habitus but as proved conclusively by the very short hind tarsi.

13—*Tranquebarica* group.

In this group the humeral lunule becomes greatly inflexed and posteriorly oblique, most of the other characters being as in the two preceding groups. It includes four evident subgroups, typified by the four very isolated species *tranquebarica*, *hyperborea*, *diffracta* and *plutonica*. The species and subspecies are *tranquebarica* Herbst (*vulgaris* Say and *obliquata* Dej.), *kirbyi* Lec. (*obliquata* Kirby), *vibex* G. H. Horn (? *roguensis* E. D. Harris), *diffracta* and *plutonica* Csy., *horiconensis* and *bellissima* Leng and *viridissima* Fall; also *turbulenta** and *crinifrons**. *Sierra* Leng belongs to the *purpurea* group; it is an isolated and valid species and not by any means a variety of anything.

14—*Repanda* group.

This is a very large group, characterized by a smaller and shorter body than in the three preceding and a humeral lunule which is only moderately inflexed posteriorly and to nearly similar a degree as at base, most frequently resolved into two dots; the sculpture, pubescence and other characters are nearly as in the preceding. The various forms are *repanda* and *duodecimguttata* Dej., *oregona* Lec., *ancocisconensis* Harris, *unijuncta*, *depressula* and *scapularis* Csy., *eureka* Fall and *maricopa* Leng, as well as *bucolica**, *sterope**, *quadripennis**, *ovalipennis**, *sonoma**, and *audax**. *Depressula* and *scapularis* form a well characterized subgroup in having the elytra more oblong, less convex, more coarsely punctured and of a vivid green that does not appear in any other forms. *Ancocisconensis* was made the type of a separate group, far removed from *repanda*, by Leng, but I cannot appreciate the reasons for this disassociation. *Unijuncta* is much smaller and narrower than *repanda*, in addition to the different form of maculation, and I have little or no doubt now that it is a distinct species; it has probably not been correctly identified by Mr. Leng.

15—*Hirticollis* group.

The habitus here is rather different from *repanda* and allies, owing to the more inflated body and, more especially, because the humeral lunule has a distinctly different form, the posterior inflexed part being much longer, straight and transverse to somewhat anteriorly

oblique. The group includes *hirticollis* Say, *gravida* Lec., *ponderosa* Thoms.—all distinct species—and *abrupta**—a subspecies.

16—*Tenuisignata* group.

Consists of *tenuisignata* Lec., alone, so far as known. It is more slender than any of the immediately preceding groups and differs greatly in having the front bald in both sexes; it has a well developed reflexed fascia and humeral lunule as in the *repanda* group, but with all the markings very slender. There are some more or less similar species in the Mexican fauna—for example, *fera* Chev. This is abundant in Durango and has a perfectly bald front in both sexes, excepting one or two setæ near the eyes and is therefore properly a member of the *repanda* group, the markings being similar.

17—*Tortuosa* group.

In this group the body is rather small, the front bald in both sexes and the elytral markings are very fine but much extended, the fascia assuming an oblique serpentine course almost attaining the suture near posterior fourth; the humeral lunule is nearly as in the *hirticollis* group, except that the straight inflexed posterior part is more posteriorly oblique and the hind part of the marginal dilatation at the point of origin of the fascia is dilated, tending to isolate itself to form the posterior marginal spot of the *rufiventris* group. The species are few in number, comprising *tortuosa* Dej. and *sigmoidea* and *serpens* of LeConte; *serpens* is by no means a synonym of *tortuosa*, being a very much smaller, more slender and more delicate species.

18—*Gabbi* group.

The body is of nearly similar size and outline and the front is similarly nude, but the elytral markings are much heavier and of radically different development, the anterior extension from the outer part of the apical lunule being more elongate than in any other known species, and, between it and the suture, is projected the very long posterior ramus of the medial fascia; the only species is *gabbi* Horn, from San Diego, California.

19—*Dorsalis* group.

The development of elytral ornamentation here is as isolated as that of *gabbi* but, though remindful of it in some respects, is not at all homologous; here it is the humeral lunule that is greatly extended, being flexed posteriorly along the suture to the middle, where it sometimes joins the much extended anteriorly hamate extremity of the transverse band, seen in feeble development in the *blanda* type; the head here is nude in both sexes as in *gabbi*. The elytra sometimes become entirely white, except narrowly along the suture. In some cases, such as *apricoidea*, intermediates seem to be wanting and there is therefore a suggestion of true dimorphism, a condition particularly characteristic of sea-beach species. The species and subspecies are *dorsalis* Say, *Saulcyi* Guér., *media* Lec., *semipicta* Csy., *munifica** and *apricoidea**.

20—*Pamphila* group.

A single isolated species constitutes this group at present—*pamphila* Lec. The head is large and hairless, the hind body short and broad, somewhat as in the preceding group, but the markings are of the *prætextata* order.

21—*Circumpicta* group.

The head is hairless and well developed, the body elongate, the elytra with entirely white margins, the middle band oblique, straight, sometimes long, but rudimentary in the type species, and the legs are long. The various forms are *circumpicta* Laf., *californica* Mén., *prætextata* Lec., and *ambiens**, *inspiciens**, *fulgoris** and *stringens**.

22—*Togata* group.

In some respects this is remindful of the *circumpicta* group, the elytral margins being broadly white, but the tarsi are shorter and the head hairy. The species known so far are *togata* Laf., *apicalis* W. Horn and *globicollis**.

23—*Lepida* group.

This is one of the most isolated types of the genus and I am unable to trace the development of its type of ornamentation from any of the others so far known. The form of the white lateral margin

and internal offsets is manifestly of the *blanda* type, but there is no other species having the sutural white vitta which here expands greatly toward base. The short broad hind body recalls that of *pamphila*, but the very pallid legs and antennæ are peculiar and the tarsi are rather short; the head is hairy and the legs are unusually pubescent throughout. The known components of the group are *lepida* Dej. and *insomnis**.

24—*Gratiosa* group.

The general outline here changes to the elongate form characterizing the *marginata* group and sexual modifications of the elytral apices, so greatly developed there, become apparent here also, but the scheme of ornamentation is different; it is peculiar to the group but betrays some affiliation with the *prætextata* type. The head is very densely hairy and the legs are very long and slender and much more pubescent than in any other of the neighboring groups, except the preceding. The only three known species are *gratiosa* Guér., *hirtilabris* Lec. and *smythi* E. D. Harris, of the southern Atlantic and Gulf regions.

25—*Marginata* group.

This is one of the larger of the American groups of the genus, and as here organized comprises several of the smaller groups proposed by Mr. Leng. There is evidently a strong bond of affinity between all of the species as shown especially by the general habitus, which is similar throughout. The head is hairy, the legs long but not pubescent, the elytra elongate and the modification of the elytral apices in the female always evident and sometimes very radical, either in the abrupt sinuation of the oblique apical edges as in *cuprascens*, or of the apices themselves as in *marginata;* in *blanda* these modifications are barely traceable, but this species is distinguished by a formation of the mandibles that does not seem to have been referred to; they are very long and slender, with the teeth grouped nearer the base than usual. This group will include *marginata* Fabr., *blanda* Dej., *hamata* Brullé, *cuprascens*, *macra*, *wapleri*, *nevadica* and *sperata* Lec., *puritana* Horn, *inquisitor* Csy., *knausi* Leng, *marutha* Dow and also *mercurialis**, *amnicola** and *mundula**. For many years I have had an example of *marutha*

in my cabinet, regarding it simply as a green specimen of *sperata*, but on closer observation it is seen to have a broader form and the external angulation of the female elytra is much more obtuse than in *sperata*.

The mandibles in *Cicindela* are seldom observable throughout their length when attached to the head, but where they are fully exposed to view they may be seen to be remarkable in dentition. The right mandible has the usual three teeth near the middle of its length, the middle one sometimes very much smaller than the others, but there is another very prominent tooth at the base which is not single, but double, the two teeth generally being of the same prominence and placed side by side on a transverse line of the inner edge of the mandible; the opposite tooth of the left mandible is also duplex but not so strongly, and when the mandibles are closed fits into the corresponding tooth of the right mandible, thus securely locking them. I am unable at present to state how constant this formation may be throughout the genus, but it is analogous in all that I have been able to examine, and the basal paired tooth of the right mandible becomes very prominent in the *limbata* group as well as in *ponderosa*.

26—*Punctulata* group.

We begin here a rather abrupt departure from any of the preceding groups and again have to deal with subglabrous forms; they however differ from the earlier groups of the genus in having the subsutural line of foveæ better developed and include nearly all those forms having a rufous abdomen. The *punctulata* type is so well known as to need no present comment, further than to say that the abdomen, as in the two following groups, is not rufous but black and metallic as usual. This group comprises *punctulata* Oliv. (*micans* Fabr.), *chihuahuæ* Bates (*micans* Shpp., Leng nec Fabr.) and *boulderensis* Csy.

27—*Severa* group.

The body is larger in this type than in the preceding and gigantic when compared with the following group, smooth, subglabrous, sometimes with sericeous lustre, with large head and very prominent eyes. The only two known species are *severa* Laf. and *striga* Lec.

28—*Viridisticta* group.

The species here are among the most minute of the genus, rather slender, usually with the angulate fascia and apical lunule distinct and often with a small discal pale spot near basal third, the punctures conspicuously blue or green. *Viridisticta* does not occur north of Mexico and our species, generally so identified, is *arizonensis* Bates. The beautiful little Cuban *viridicollis* Dej., also belongs here and I also have two examples of a Panama species which is closely allied but very differently colored.

29—*Abdominalis* group.

The abdomen in this group is generally red, as it is in all the succeeding groups except *flavopunctata*, where it is only occasionally red and in *lemniscata*, which I prefer to place last in the series. The surface is polished in this group as in the *severa* group, and the subsutural line of foveæ is even more developed; the species are of very small size and are subglabrous. Those forms known thus far are *abdominalis* Fabr., *scabrosa* Schaupp, *extenuata** and *faceta**.

30—*Politula* group.

This group has the body much broader than in the three or four preceding, nearly as in the *rufiventris* group in this respect, but with the surface polished as in the preceding and not dull as in all the following except *lemniscata*. It is also distinguishable by an absence of all pale maculation, excepting an apical lunule, which may be only partially represented or wanting. The specific or subspecific forms are *politula* Lec., and *cribrum**.

31—*Rufiventris* group.

The type of *rufiventris* Dej., as explained by Bates (Tr. Ent. Soc. Lond., 1890, p. 503) is from St. Domingo; it has a complete apical lunule and three detached spots in triangle on each elytron. It is possible of course that Dejean's type was not correctly labeled, for we have a form in Pennsylvania and Ohio which has a complete apical lunule and the three more anterior spots as the sole maculation, excepting a small humeral spot, and this has always been identified in our collections as *rufiventris* Dej. The normal maculation of the group consists of a humeral and an apical lunule,

an obliquely sigmoid median band, a subapical spot near the outer end of the apical lunule and a marginal spot near apical third. According to Bates the true *16-punctata* of Klug (*rubriventris* Chev.) is 9–10 mm. in length, generally dark and bluish in tint and the markings form on each elytron eight equal-sized spots, the two median sometimes connected by a thin line. It occurs chiefly in the vicinity of the City of Mexico. The labrum is scarcely at all produced in the middle, even in the female. This definition does not suit the Arizona and New Mexican form that we are accustomed to call *16-punctata*, as in fact is recognized by Bates (l. c.), but he does not designate this form by name. Our species and subspecies of this group are numerous and comprise *rufiventris* and *hentzi* Dej., *cumatilis* and *hæmorrhagica* Lec., *pacifica* Schaupp, and *arizonæ* Wick.; also *woodgatei**, *collusor**, and *sonorana** described below.

32—*Flavopunctata* group.

The chief differences between this group and the preceding lie in the usually black abdomen, in the absence of the marginal spot of the elytra near apical third and the presence of only the outer end of the apical lunule, which forms a clearly defined rounded marginal spot; it is essentially a neotropical group, only one species crossing the Mexican border into Texas—the *rectilatera* of Chaudoir. I have also a good series of *chiapana* Bates, from Hunduras, and of an undescribed but very similar form from Guerrero. The dark abdomen in *rectilatera* misled Mr. Leng, who placed the species far out of its proper position in the series. *Chiapana* Bates, is almost perfectly similar though much smaller and has a bright red abdomen as in the *rufiventris* group. The color of the abdomen also becomes largely pale in some Mexican forms of the *repanda* group; so the pale color of the abdomen is not a group character.

33—*Sommeri* group.

This group is closely allied to the preceding but the hind body is more inflated and the elytral markings become very broad and confluent, consisting of a broad but short humeral lunule, a broad straight oblique fascia from the margin nearly to the suture and a arge circular marginal spot in the same position as the subapical

spot of the *flavopunctata* group. My series of *sommeri* Mann., is from Sonora, but Mr. Leng states that it has been reported from the vicinity of San Diego, Cal., by Henry Edwards.

34—*Marginipennis* group.

A small group of very distinct species, elongate, subparallel in form, subglabrous and with dull lustre, the elytra rather narrowly but continuously margined throughout externally with white, having an internal medial offset, short in the type species but long in *schauppi*. The abdomen is bright red, but in the recently described *segnis*, which I venture to place in this group because of its external resemblances, the abdomen is apparently not red but metallic green. The only three species are *marginipennis* Dej., *schauppi* Horn and *segnis* E. D. Harris. In the first the labrum is short, not prominent medially but with a distinct median tooth; in *schauppi* it is much longer, more prominent, the medial lobe arcuately truncate and with a very minute tooth.

35—*Lemniscata* group.

The singular small parallel and bright cupreous-red *lemniscata* Lec., is the only species of this group. The labrum is but feebly sinuate medially at apex and from the middle of the sinus projects a small acute tooth. In view of this, as well as the statement above made in regard to *schauppi*, I am unable to understand what Mr. Leng could have had in hand when he drew the diagrams of the labrum of *lemniscata* and *schauppi* on plate II of his memoir (Tr. Am. Ent. Soc., 1902), as the form of the labrum in these cases is nearly similar in the sexes. The white vitta of *lemniscata*, which is discal and not marginal, may be homologous with the wonderful solar spectrum arrayed in a similarly placed longitudinal vitta in the Mexican *aurora* Thoms., except that in the former the white vitta joins the outer end of a regular apical lunule, while in *aurora*, *radians* and other similar forms it bends inwardly to the suture posteriorly, without approaching the margin. At any rate *lemniscata* has no ally in our fauna and I would not know where to place it in the succession here proposed.

Remarks and Descriptions.

4—There are at least three evident subgroups of the *longilabris* type baseable upon *longilabris*, *montana* and *perviridis*. An example from Manitoba in my collection is smaller and of narrower form than *longilabris* and probably represents *albilabris* of Kirby, a valid subspecies; *laurenti* is another subspecies of the *longilabris* subgroup, being of a paler brown, denser and more opaque sculpture and broader elytral markings; the two forms described by Mr. Leng are not at hand, but they also belong to the *longilabris* type without much doubt. Of the taxonomic value of the following I am in some doubt but will describe it as a species allied to *longilabris:*

Cicindela ostenta n. sp.—Rather smaller and with relatively shorter and broader hind body than *longilabris*, bright green and rather notably shining above, the legs and anterior part of the under surface green, the abdomen and median part of the metasternum violet-blue, the last segment of the former green; elytral markings as in *longilabris*. Length (♂) 13.5 mm.; width 5.0 mm. California.

This is probably the form that has hitherto been referred to as a green *longilabris*, but there is strong reason to believe that it is a true species rather than a subspecies, for the labrum differs greatly. In the male of *longilabris* the apex of the labrum is sinuate, with a stout tooth projecting from the sinus, the latter defined laterally by obtuse but prominent teeth. In *ostenta* the labrum of the male is strongly and almost evenly rounded at apex, with a tooth projecting from the middle but without further modification.

Nebraskana is a subspecies of *montana*, similarly having shining elytra with the punctures well separated among themselves and a totally black labrum in the female, but the outline is more slender and the size rather smaller. My three examples of *montana* came from Lethbridge, Alberta, Canada, and have only a sculptural indication of the middle band. I formerly thought that they were *nebraskana*, but closer observation shows that this is not the case; they agree exactly with the original description of *montana*. The following is another subspecies:

Cicindela montana ssp. **canadensis** nov.—Smaller and much shorter than *montana*, less shining, deep black throughout above and beneath, the under surface strongly shining; labrum more oblique at the sides, the apex narrower, the sinus deeper, the median tooth stronger, projecting well beyond the dentiform sides of the sinus, the surface pale throughout

(♂) or pale becoming gradually black at the periphery (♀); elytra with the punctures not generally isolated as they are in *montana* but confluent, each elytron having merely a slender elbowed discal middle band pale; legs and tarsi similarly rather slender. Length (♂♀) 11.0–13.0 mm.; width 4.7–5.0 mm. Canada (Calgary, Alberta).

The following is certainly a distinct species of the *montana* subgroup:

Cicindela spissitarsis n. sp.—Short, feebly convex, black, the bottoms of the elytral punctures obscure green; under surface purplish-black, the abdomen metallic green and violet; labrum (♀) as in *longilabris*, black throughout; head and prothorax with dense rugulation, which is longitudinal but not very regular on the front, the latter nearly flat, abruptly depressed at the inner margins of the eyes; prothorax transverse, deeply, transversely bisulcate; elytra rather less than one-half longer than wide, sculptured nearly as in *canadensis*, the punctures very dense and confusedly confluent, each elytron with only the inner end of the middle band pale; legs rather short, the tarsi stouter than in any other American species of the genus, the posterior equal in length to the tibiæ, pale piceo-testaceous in color, the third joint distinctly less than three times as long as wide. Length (♀) 11.0 mm.; width 4.7 mm. Canada (Aweme, Manitoba),—Norman Criddle.

The tarsal structure, sculpture and coloration in this species isolate it at once among its fellows. The following belongs to the *perviridis* section of the present group:

Cicindela perviridis ssp. **placerensis** nov.—Oblong, rather depressed, dull in lustre, the upper surface blue to obscure green, the entire under surface polished and pure blue to greenish-blue; labrum as in *perviridis*, similar in the sexes, pale throughout, the apex rather narrowly truncate, with a strong tooth projecting from the truncature; vertex concave, distinctly and subevenly strigilate; prothorax very short and strongly transverse, the sides converging and nearly straight from apex to base, the transverse sulci deeper blue; elytra as in *perviridis* in maculation and sculpture but shorter and more obtuse at apex, the punctures very shallow, granulose as usual, confluent and each with a shining elevation; sometimes the surface seems to be almost even, with only the shining elevations remaining; legs rather long, slender, the hind tarsi longer than the tibiæ. Length (♂♀) 12.0–12.8 mm.; width 4.7–5.3 mm. California (Placer Co.),—Koebele.

In my only male example of *perviridis* the outline is more elongate, the surface similarly very feebly convex, the color pure green but with dull lustre above and pure metallic green throughout beneath; the prothorax is distinctly less transverse, with the sulci not or scarcely at all deeper in color; the humeral lunule is complete, the middle band expanded at the margin, extending

inwardly to about the median line and the apical lunule is represented only by a large rounded, posteriorly attenuated marginal spot near the anterior limit of the apical obliquity and a very feeble remnant near the sutural angles.

6—In the *nigrocærulea* group the following Mexican species should be included:

***Cicindela townsendi** n. sp.—Rather stout and convex, alutaceous, completely immaculate, blackish-cupreous to brighter cupreous-red, the under surface dark blue and glabrous, not at all pubescent laterally; labrum pale, clouded with black along the apex, the latter broadly, strongly, arcuately produced and bearing a single rather strong tooth; head and prothorax glabrous, the latter slightly narrower than the head, a fourth to third wider than long and moderately obtrapezoidal, finely sculptured, with the sulci rather shallow; elytra oblong-oval, with slightly arcuate sides, about two-thirds longer than wide, together evenly and obtusely rounded at apex with smooth marginal bead, the surface virtually impunctate, except the small but abrupt foveæ in the two depressions, but strongly sericeous in lustre and with barely discoverable vestiges of moderate punctures equally throughout the surface; hind tarsi longer than the tibiæ, slender. Length (♀) 11.5–12.0 mm.; width 4.2–4.6 mm. Mexico (Sierra Madre Mts., 7300′, Chihuahua),—C. H. T. Townsend.

Evidently allied to *viatica* Chev. and *nigrilabris* Bates, but differs in having the labrum purely unidentate, there being no vestige of lateral teeth and in having the elytral sculpture uniform, though very feeble, and not closer apically. The labial palpi are piceous, except the last joint which is feebly claviform and with green metallic lustre.

7—It seems a correct course to announce the following member of the *scutellaris* group as a distinct species:

Cicindela criddlei n. sp.—Form very stout, the upper surface shining but with feeble to moderate alutaceous lustre, wholly brilliant red to obscure green feebly suffused with red, the elytral margins broadly and entirely white, the inner margin of the vitta broadly swollen medially and emarginate at the middle of the usual position of the apical lunule, sometimes with the margin interrupted just before the apical lunule and with the anterior part reduced in width and more withdrawn from the exterior edge; under surface shining metallic blue to green throughout; labrum strongly tridentate at the middle in both sexes; prothorax moderately transverse, nearly as wide as the head, with many long erect white hairs at the sides; elytra with the punctures feeble and obsolescent, rather distinct toward base. Length (♂ ♀) 12.0–12.5 mm.; width 5.0–5.4 mm. Canada (Aweme, Manitoba),—Norman Criddle.

The four homogeneous examples, kindly communicated by Mr. Criddle, represent a form allied to *lecontei* but very much stouter, the head similarly hairy in the male but with the erect hairs on the flanks of the prothorax longer, much more numerous and conspicuous, especially in the male; the outer margins of the elytra as a rule are broadly and continuously white throughout and not resolved into three widely separated sections as in *lecontei* and *modesta*.

9—The *fulgida* group, as here organized, contains but few discordant structural elements, and for the most part holds together very well in its chief distinguishing feature among the neighboring groups, that is the very short tarsi; these are longer in *fulgida* than in any other species of the group but not so very much longer, and *cochisensis*, though having the characteristically short tarsi, is conspicuously different in its immaculate elytra, there being no spot except the humeral which is occasionally evident. All collections contain a form of *latesignata* in which the broad elytral marking becomes in great part confluent, leaving only the suture, very broadly basally and abruptly expanded in a transverse spot near apical fourth, dark. This form has never been named but, as there are no intermediates and the taxonomic value of the form unknown, it seems best to give it a definite designation as follows:

Cicindela latesignata ssp. **obliviosa** nov.—Similar to *latesignata* in form, color and sculpture, excepting that the pale markings of the elytra are broadly confluent. Length (♂ ♀) 12.5–13.0 mm.; width 4.8–5.2 mm. California (Seabeaches at San Diego, occurring apparently with the normal form of the species).

The constancy of this aberration is quite as inexplicable on the ground of mere variation, as is that of the pale form in some species of the *dorsalis* group. It is possibly a case of asexual dimorphism, but its real nature is not known. As a rule the outline of *obliviosa* is a little narrower than that of *latesignata* and in those rare examples displaying a slight separation of the markings, it will be observed that the humeral lunule is more oblique or less transverse posteriorly than in *latesignata*.

Cicindela limbigera ssp. **nympha** nov.—Nearly similar to *limbigera* but larger and with larger head, the color darker æneous-brown and not blue or green as in that species; head and prothorax with similar plentiful bristling white pubescence; elytra similar in form and sculpture

but larger, only feebly convex, white, with a sutural dark vitta which is broad at base, becoming gradually narrower and extinct at apical fourth or fifth, the white field having on each a single feebly arcuate dark line near outer third behind the middle, oblique in direction but wholly without trace of other dark maculation; tarsi very short. Length (♂ ♀) 10.5–11.3 mm.; width 4.0–4.4 mm. Canada (Aweme, Manitoba),—Criddle.

Differs from *limbigera* in its larger size, aeneous-brown color—more greenish beneath—and in the constant absence of the dark sublateral spot before the middle, which is as constantly present in that species.

11—In the *purpurea* group there are many rather distinctly characterized species and subspecies not as yet recorded in the literature; some of these are as follows:

Cicindela purpurea ssp. **auguralis** nov.—Larger and with more elongate hind body than in *purpurea*, obscure green with cupreous side margins to brownish-cupreous suffused with greenish; elytral markings, when complete, consisting of an entire humeral lunule, a middle band sometimes expanded at the margin and a complete apical lunule, but generally with the humeral and apical lunules divided broadly. Length (♂ ♀) 13.0–15.0 mm.; width 5.2–5.5 mm. Colorado.

The greener examples of this subspecies have been confused with *graminea* in most collections. *Graminea* is a much narrower and more elongate form, with less transverse prothorax, pure green above, with brighter green or blue metallic side margins; it is much more deficient in basal maculation, only one of my three examples having even so much as a single humeral spot. From *purpurea* it differs in its larger size, more elongate elytra and much more complete basal maculation of the elytra, though the coloration, in the prevalence of brownish-coppery shades, is similar.

Cicindela purpurea ssp. **ardelio** nov.—Smaller and much narrower than *purpurea*, the elytra more elongate; color dark and obscure uniform green above, with simply slightly paler and more shining and narrower side margins, very dark blue beneath; elytral maculation complete, consisting of an entire humeral lunule, an apical lunule complete, except that the outer end is detached as a discal spot, and a middle band only very feebly oblique at its inner end and much expanded along the side margins. Length (♂) 12.5 mm.; width 4.7 mm.; New Mexico.

I would have considered this to be *graminea*, were it not for the still narrower form of the body and the fuller elytral maculation,

but especially the different structure of the hind legs. The hind tarsi in the type are very long, in fact almost one-half longer than the tibiæ, while in the male of *graminea* they are only a third or fourth longer than the tibiæ.

Cicindela purpurea ssp. **inducta** nov.—Body black throughout but with a feeble greenish tinge especially anteriorly, the under surface bright coppery, the metasternum and sides of the abdomen basally green, the remainder of the abdomen blue, the apices of the segments green; legs obscure coppery-green; elytra with the side margins only differing slightly from the disk and obscure coppery, the markings consisting of a humeral and post-humeral spot, a median band oblique internally and about attaining the outer edge, along which it is slightly expanded anteriorly, and a complete apical lunule which is bent at the middle to form a right angle. Length (♂) 11.5 mm.; width 5.0 mm. Colorado.

Much smaller than *auguralis* or *auduboni* and differing from the latter very greatly in maculation and from both in color throughout.

Limbalis Klug, is a species different from *purpurea*. The penultimate joint of the labial palpi frequently becomes pale in *limbalis*, though this may not be entirely constant within the same specific or subspecific form in this group, but I have never noted an instance of its becoming pale in *purpurea* or in any of its subspecies. The body is much narrower and more elongate than in the typical *purpurea* section. I think that *transversa* Leng, of which I have a single example from Indiana, is a member of the *limbalis* and not of the true *purpurea* section, and *splendida* is also a *limbalis*-like species. I do not seem to have either *spreta* or *amœna* of LeConte and so cannot judge definitely concerning them, but from what is quoted by Mr. Leng they also would seem to be of the *limbalis* type. *Limbalis* is represented in my collection by a good series from Connecticut to Iowa; one male from Fort Gratiot, Mich., is shorter in the hind body than any other, but there seem to be but few other differences; the color above is coppery-red, the side margins metallic-blue, the thoracic sulci also blue; they all have a humeral and post-humeral pale spot, the elbowed middle band penetrating the blue margin and sometimes virtually attaining the elytral edge but never expanding along the latter, a transverse apical streak and a detached subapical external spot; no one of my examples has a complete humeral or apical lunule. The following is a very beautiful and much smaller development:

Cicindela limbalis ssp. **awemeana** nov.—Smaller than *limbalis* and with shorter hind body, the upper surface generally intense purplish-red, sometimes however without the purplish tinge but always brighter than in *limbalis*, the thoracic sulci and marginal streak and vitta behind the eyes blue as in *limbalis*, the elytral side margins purplish-blue to green; under surface dark blue to bluish-green; elytral maculation nearly as in *limbalis*, except that the apical lunule is frequently entire. Length (♂ ♀) 11.5–12.5 mm.; width 4.8–5.2 mm. Canada (Aweme, Manitoba), —Criddle.

The under surface and legs are more hairy than in *limbalis*.

Cicindela limbalis ssp. **eldorensis** nov.—Much narrower than the preceding, but otherwise nearly similar in coloration and sculpture, the sutural beading still more vividly green; under surface variegated with blue, coppery and green, the pubescence toward the sides and on the legs much less developed and resembling *limbalis* proper. Length (♂) 12.5 mm.; width 4.65 mm. Colorado (Eldora).

Distinguishable from *limbalis* by the smaller size and especially the more slender outline, and inhabiting a different faunal region. It is narrower than *awemeana* and less pubescent beneath and on the femora.

Lauta Csy., is the west coast representative of the true eastern *purpurea* and these both differ from any of the Rocky Mountain forms. Not one of my eight representatives of *lauta* has the faintest trace of any pale maculation at or near the humeri, which is also the case with the true *purpurea*, and the hind body in both is of much shorter, more subquadrate outline. The following is a very interesting subspecies of *lauta*, being the smallest member of the *purpurea* group:

Cicindela lauta ssp. **franciscana** nov.—Resembles *lauta* in its uniform vivid sericeous green color, the under surface intense shining blue; head larger, being wider than the prothorax, the latter much smaller, somewhat less transverse and more strongly obtrapezoidal, the sulci, as well as the very broad lateral margins of the elytra, deep violet-blue, the markings similar, consisting of a very small transverse dash near the apical angles and a median band, but here the latter is not inwardly bent posteriorly but is transverse and confined to the median part of the disk; elytra shorter, together less than a third longer than wide. Length (♂) 10.5 mm.; width 4.4 mm. California (locality unrecorded).

The general coloration is a little more obscure than in *lauta* and the outline of the body and form of the median fascia very different.

The following is a distinct development of the *decemnotata* type:

Cicindela decemnotata ssp. **albertina** nov.—Larger and still more elongate than *decemnotata*, green, with feeble subcupreous reflections and rather shining, the under surface paler green; lateral margins broadly shining and brighter green; elytral maculation as in *decemnotata*, though relatively not quite so broad and with the apical lunule, which is broad and entire as a rule in that species, strongly divided, the outer part forming a rounded discal spot; middle band with the oblique posterior part similarly long, but with the outer part tending less to attain the lateral edges, the outer metallic border being more developed; all the pale spots and bands seem more widely isolated among themselves, owing to the larger size of the body and relatively narrower maculation. Length (♂♀) 11.8–13.0 mm.; width 4.75–5.0 mm. Canada (Lethbridge, Alberta). Communicated by Mr. Criddle.

I have seen only the type pair, which has been compared with three very good examples of the typical *decemnotata*.

12—In the *formosa* group there are three subgroups, represented by *formosa*, of very stout build and moderately elongate, very strongly tridentate labrum, *venusta*, having a much narrower body but still longer though not quite so strongly tridentate labrum, and *admiscens*, having a short transverse labrum as in the *tranquebarica* group, with a narrow body and markings as in *venusta*. The following is a very brilliant modification of *formosa:*

Cicindela formosa ssp. **luxuriosa** nov.—Form nearly as in *formosa* but not quite so stout, with strong opaque-sericeous lustre, bright coppery to purplish-red throughout above, the white elytral margins much narrower than in *formosa*, with the middle band much narrower, more transverse and less elbowed; legs and under surface bright blue; pubescence and sculpture throughout nearly similar. Length (♂) 15.0 mm.; width 5.7–5.9 mm. Colorado (near Denver),—Soltau.

Though evidently a modification of *formosa*, this very beautiful form merits special designation because of the very great recession of the characteristically broad markings of the *formosa* section.

Cicindela venusta ssp. **versuta** nov.—Nearly similar to *venusta* but larger and evidently somewhat stouter, the coloration more reddish and less opaque coppery, the pale markings even a little broader; under surface bright green, the sides of the prothorax and the sternal side-pieces bright cupreous; long white pubescence much more abundant, especially on the femora. Length (♂♀) 11.8–14.0 mm.; width 4.6–5.5 mm. Canada (Aweme, Manitoba),—Criddle.

In *venusta* the color is pale green throughout beneath; my series is from Kansas and Colorado.

Cicindela venusta ssp. **gracilenta** nov.—Similar to *venusta* and *versuta* but much more slender and smaller in size, the coloration and maculation above and beneath as in the latter; hairs on the front, femora and thoracic flanks coarser and whiter than in *venusta*; prothorax much narrower and less transverse, the head smaller. Length (♂) 11.7 mm.; width 4.2 mm. Montana.

The hind tarsi have the joints pale toward their bases in a way not noticeable in either of the other forms mentioned, and the porrect white spinules at their apices are relatively longer and more conspicuous.

The following species presents a singular combination of characters and is distinctly isolated:

Cicindela admiscens n. sp.—Form and ornamentation nearly as in *venusta*, the inner prolongation of the humeral lunule being more oblique as a rule, the ground color above more obscure cupreous-brown; pubescence throughout less abundant, the sculpture a little finer; labrum differing remarkably, being short and transverse as in the *tranquebarica* group, the three teeth moderate but distinct; prothorax relatively smaller, narrower than the head, similarly sulcate; elytra with very broad white marking, almost exactly as in *venusta* throughout; under surface colored as in *versuta;* legs slender. Length (♂ ♀) 13.0–15.0 mm.; width 4.9–5.5 mm. New Mexico (Jemez Springs).

A large series of this species was sent to me recently by Mr. Woodgate. I mistook it at first for *venusta*, but the radically different labrum, which is similar in the sexes, prevented any association with that species; in fact some doubt might arise as to whether it should not be considered an aberrant member of the next group, but in my opinion it is correctly assigned to the *formosa* group.

13—In the *tranquebarica* (*vulgaris*) group the species in general are of rather larger size than those of the *repanda* group, and, as before stated, segregate themselves into four widely distinct types. In the *tranquebarica* subgroup the various forms are closely allied among themselves, but include two subtypes, the first having the oblique inner part of the middle band short as in *tranquebarica*, *horiconensis* and the two following, and the second having this oblique arm long as in *vibex* and *kirbyi*.

Cicindela tranquebarica ssp. **turbulenta** nov.—Similar in general to *tranquebarica* but rather larger and much stouter, not black or blackish but dull and deep red-brown, more shining and red at the outer elytral margins; three labral teeth very strong, not on a median projecting part

of the edge as is generally the case in that species; front coarsely, strongly pubescent; prothorax very large, wider than the head, nearly similar but more transverse; elytra broader but with similar markings; under surface similar but more pubescent at the sides. Length (♀) 16.0 mm. width 6.5 mm. Mississippi (Vicksburg).

Readily distinguishable by its large size, broad form and very large prothorax.

Cicindela crinifrons n. sp.—Smaller and more convex than *tranquebarica*, dull and still blacker in color above, the under surface as in that species; front densely hispido-pubescent, even more densely in the female, the hairs fine; prothorax, like the head, paler brown, a lateral streak and the sulci blue; elytra one-half (♂) to one-third (♀) longer than wide, the sculpture and ornamentation nearly similar, except that all the white markings are generally finer and that the humeral lunule is much less oblique posteriorly, ending at about the median line of each elytron at and not behind basal third; under surface more pubescent laterally. Length (♂♀) 11.0–13.0 mm.; width 4.7–5.7 mm. North Carolina (Asheville and Southern Pines).

This form differs so much from *tranquebarica* in size, convexity, in its blacker color, more abundant pubescence and in the direction and extent of the posterior part of the humeral lunule, that I prefer to give it a specific status.

On reading Dejean's description of *obliquata* very carefully, it becomes evident that *obliquata* Dej., is merely the species named *tranquebarica* by Herbst and *vulgaris* by Say. This was recognized also by LeConte, who gave the name *kirbyi* to the *obliquata* of Dejean as understood by Kirby. The species should therefore be:

Cicindela kirbyi Lec.—*Obliquata* Kirby nec. Dej. (Faun. Bor. Am., iv, 10)—Narrower, more elongate, more convex and paler coppery-brown than *tranquebarica* Hbst., and with the elytral markings much broader though otherwise as in that species, except that the oblique part of the middle band is more extended posteriorly. Colorado to Manitoba (Aweme).

The northern specimens are a little smaller than the southern as a rule, but do not differ otherwise, and there are two examples from Colorado before me, in which the elytra are broader and more inflated than in any others of a good series. There are a good many varieties near *vibex* and *kirbyi*, but my material is not sufficient to differentiate them.

14—The *12-guttata* section of the *repanda* group is composed of numerous more or less important elements, which have not as yet

been very thoroughly studied.* I find the various components to be separated by clear-cut lines as a rule, based upon general coloration, sculpture, outline or pubescence and, as represented by the material in my own collection alone, it is perfectly evident that there are many forms worthy of separate designation in this section of the group. Of the true *guttifera* stock there are three geographic subspecies, one inhabiting solely the coast region of California to the northward of San Francisco, another, *maricopa*, occurring so far only in Arizona, and the third—the typical *guttifera* —generally paler than the others and occurring abundantly in New Mexico and Colorado and probably still further to the northward on the eastern slope of the Rockies. *Oregona* is widely distinct in its system of sculpture. The Mexican *fera* Chev., with partially red abdomen is also a member of this *repanda* group. The taxonomic units and subunits in this group are so numerous that it seems best to give a brief tabular statement of their chief differential characters, so far as represented by material at hand; this is as follows:

Elytral markings complete, the humeral and apical lunules not divided, the middle band expanded along the side margins; elytra (♀) more or less abruptly expanded at the sides before the middle; frontal convexity pubescent in both sexes.....2

Elytral markings incomplete, the humeral and apical lunules broadly divided or obsolete, the elytra (♀) not or but very faintly expanded before the middle.....4

2—Elytral punctures small, the surface sometimes appearing to be almost impunctate but with the polished granules always conspicuous though small; color blackish-brown, the white side margin well separated from the humeral lunule; entire under surface blue. Length (♂♀) 12.0–12.5 mm.; width 4.7–5.0 mm. New York.
ancocisconensis Harris

Elytral punctures comparatively coarse, relatively closer, the granules shining and more or less coarse; body beneath blue, with the sides of the sterna cupreous.....3

3—Color brown-black, the anterior parts more cupreous as usual; white side margin widely separated from the humeral lunule as in the preceding, the hind body more elongate than in *repanda*,

*The comments of Mr. Fall relating to this group (Ent. News, 1901, p. 307) are enlightening, but do not extend deeply enough into the subject, else the difference in type of sculpture—not *degree* of sculpture but *type* of sculpture—between the *guttifera* and *oregona* sections of the group could not possibly have been overlooked by him. These differences were seen and appreciated by LeConte but have ever since remained persistently in oblivion.

the size materially larger, the prothorax larger and more transverse. Length (♂ ♀) 11.5–12.5 mm.; width 4.8–5.3 mm. Canada (Aweme, Manitoba),—Criddle..... **bucolica** n. sp.

Color paler but rather dark brown, the white sides of the elytra prolonged anteriorly almost or quite to the humeral lunule; prothorax smaller, only very slightly transverse and not quite as wide as the head in either sex, not at all as in the preceding, where it is fully as wide as the head to evidently wider. Length (♂ ♀) 10.5–12.5 mm.; width 4.0–5.2 mm. Long Island to Colorado and Manitoba. A form represented by three examples from Southern Pines, North Carolina, is exactly similar, except that the posterior oblique part of the middle band is shorter; it is only a very feeble race but may be called *baltimorensis* Lec..... **repanda** Dej.

Color still paler and more brownish-bronze, the body very much smaller but especially more slender, the markings of the elytra broader, the side margins broadly united with the humeral lunule. Length (♂) 9.7 mm.; width 3.6–3.8 mm. Texas (El Paso).... **unijuncta** Csy.

4—Frontal convexity punctured, rugulose and pubescent throughout its extent in both sexes as in *repanda;* body above very obscure blackish-cupreous, the maculation consisting of a broadly divided humeral and apical lunule and an elbowed middle band, which is very briefly expanded along the margin in most cases; elytral punctures distinct, each attended by a polished granule, with numerous smaller granulæ interspersed; under surface blue, the pleura coppery. Length (♀) 12.0–12.5 mm.; width 5.3 mm. North Carolina and Iowa (Keokuk)..... **duodecimguttata** Dej.

Frontal convexity wholly different from any in the preceding species, hairless, except a small cluster of erect hairs at each side near the eye in both sexes; middle band of the elytra never dilated at the sides.....5

5—Elytra clearly punctured, the punctures metallic but becoming very fine and sparse toward the suture, everywhere devoid of any trace of elevated shining granules. Color coppery-brown, more metallic coppery toward the sides, colored beneath as in *repanda;* labrum as usual with a sharp median tooth at the middle of a short truncate extension; vertex concave; prothorax transverse but not so wide as the head, the sulci deep blue; elytra nearly as in *oregona* but narrower, rather convex. Length (♀) 13.0 mm.; width 5.0 mm. Kansas..... **sterope** n. sp.

Elytra clearly punctate, each puncture with a sharply elevated polished granule.....6

Elytra not punctured, except near the sides and apex, but densely microgranulato-reticulate and with many small but sharply elevated shining granules, indicating the position of punctures which have become vestigial and diffused and never metallic, the general surface of the elytra very opaque.....8

6—Elytral humeri more sharply angulate, nearly rectangular, the punctures strong; upper surface pure green, less opaque than in any other species of the group, the under surface entirely of a paler and more shining green; elytra without humeral spot, the post-humeral only

sometimes traceable as a feeble vestige; apical spot vestigial; apical margin of the labrum black in both sexes, broadly shaded with piceous medially on the disk (♀). Length (♂♀) 12.0–14.0 mm.; width 4.8–5.6 mm. California (Placer Co.)..... **depressula** Csy.

A—Similar but larger, broader and still flatter, darker and more obscure green, the prothorax larger, wider than the head; humeral and post-humeral spots both well developed, the apical spot also large; punctures closer; under surface wholly deep violet-blue. Length (♂) 13.8 mm.; width 5.4 mm. California (locality unrecorded)..... **scapularis** Csy.

Elytral humeri obtuse as usual in *repanda* and *12-guttata* 7

7—Under surface wholly polished green and blue; surface rather depressed, the elytra more inflated in the female; color above blackish-brown, never green, the maculation rather fine but variable as usual; all the spots distinct; elytral granules small; labrum with a fine entire black apical margin in both sexes, the female with a small quadrate black anterior spot at the middle; prothorax rather large and transverse, as wide as the head. Length (♂♀) 10.5–13.0 mm.; width 4.4–5.5 mm. Sierras—from middle California and adjacent parts of Nevada to Washington State..... **oregona** Lec.

Under surface shining metallic green or greenish-blue, the sides of the sterna coppery; form stouter, the size larger, opaque, olive green to coppery-brown above, the elytral markings generally larger than in the preceding; labrum wholly pale in both sexes, with only an extremely fine apical margin black and without trace of a black medial spot in the female; polished granules of the elytra larger, denser and more conspicuous than in any other species. Length (♂♀) 11.8–13.5 mm.; width 4.8–5.4 mm. Colorado. . **audax** n. sp.

8—Median band of the elytra having the usual form in the group, moderately flexed posteriorly from the marked elbow on the medial line. . 9

Median band very slender throughout, not broader at the transverse part or posterior extremity as it is in all the preceding forms, arcuately bent near the median line, the oblique posterior part longer than in any other species of the group..... 10

9—Elytra barely one-half longer than wide, together gradually and broadly rounded behind in about apical third, the edge broadly rounded externally. Color pale coppery-bronze to obscure æneous, sometimes obscure greenish, always brighter and more coppery toward the sides, the pale markings rather full, all the spots well developed; labrum with a very fine black apical margin; prothorax moderate, the sulci brighter coppery to blue; under surface bright green to bluish-green, the sides of the sterna cupreous. Length (♂♀) 11.0–12.5 mm.; width 4.5–5.4 mm. New Mexico and Colorado..... **guttifera** Lec.

A—Similar to the preceding in size, sculpture and outline but brownish-black, the elytra never more than feebly coppery at the sides; under surface wholly shining metallic green or blue, the sterna never coppery. Length (♂♀) 11.0–12.8 mm.; width 4.4–5.2 mm. California (maritime regions north of San Francisco).

sonoma n. subsp.

B—Similar to *12-guttata* in form, size and sculpture but with the upper surface wholly bright green anteriorly, the elytra dark violet, shaded gradually paler and lustrous violet-red at the sides, the under surface wholly blue and purplish-blue; labrum (♀) with an anterior medial black spot. Length (♂♀) 11.5–12.0 mm.; width 4.8–5.0 mm. Arizona (Prescott).....**maricopa** Leng

Elytra still shorter and of different shape, subquadrate, scarcely two-fifths longer than wide, abruptly rounding at the sides externally near apical fifth or sixth and thence very obliquely and obtusely rounded through the apex; upper surface very dark and obscure coppery-brown, the anterior parts barely at all paler or more metallic, the labrum with a fine even black anterior edge; cluster of hairs near each eye about two to four in number; elytra with all the spots distinct, barely at all coppery near the external edges, the surface very even, the polished granules standing out very conspicuously though not large; under surface shining metallic green and blue. Length (♂) 10.7 mm.; width 4.6 mm. Nevada (Hawthorne),—Wickham.....**quadripennis** n. sp.

Elytra longer and more evenly oval than in any other species, elliptically rounding behind from near the middle of the length, without trace of any strong external apical rounding, two-thirds longer than wide, more convex than usual, the elytral markings all distinct and full; color above very obscure and blackish coppery-bronze, feebly cupreous at the sides; prothorax large, almost parallel; under surface metallic green and blue throughout. Length (♀) 13.0 mm.; width 5.5 mm. Nevada (Hawthorne),—Wickham .**ovalipennis** n. sp.

10—Body larger than in any other species of the group, blackish-brown, the elytra feebly cuprascent at the sides; labrum (♀) with the apical edge black and the median discal region throughout the length brown; hairs near the eyes almost obsolete, perhaps more evident in the male; prothorax about as wide as the head, large, transverse, almost parallel; elytra ample, gradually subinflated in the female, the four spots on each distinct; punctuation of the elytra not quite so effaced as in the *12-guttata* section, feeble confluent indentations being rather evident, the granules mingled with numerous smaller shining specks; under surface metallic green to bluish. Length (♀) 13.5 mm.; width 5.8 mm. California (Humboldt Co.)....**eureka** Fall

Proteus Kirby is unknown to me, and I will not therefore attempt to give it a definite place in the series. It is singular that two forms so markedly different in appearance as *quadripennis* and *ovalipennis* should have both been taken by the same collector and at the same locality, but, though represented in my collection by different sexes, they certainly can not be placed together; they are probably local developments but remarkably unlike any other species of the group. The coloration of the under surface seems to be an important specific character; for example, in every one of a considerable series of

oregona in my collection the under surface is as described above, without trace of coppery sternal side-pieces, while in every example of a still larger series of *guttifera* these side-pieces are cupreous; there is no exception in either case. Dejean mentions the latter form of coloration in his description of *12-guttata*, which occurs only in the Atlantic regions, and this is confirmed by my material. *Oregona* has been very generally misunderstood; it is a mountain species, confined to the Sierra regions; Colorado and Kansas examples are specifically different and the New Mexican *guttifera* is so different in its scheme of sculpture that its confusion with *oregona* is unaccountable.

15—The species of the *hirticollis* group resemble the preceding closely and should perhaps be considered more properly as an extension of it, but the humeral lunule assumes a very different form, which serves constantly to differentiate the two groups. The species are three in number as before enumerated:

Cicindela gravida ssp. **abrupta** nov.—Form nearly as in *gravida* but a little narrower, darker and more blackish-brown in color, the markings similar, except that the humeral lunule is broadly interrupted, the posterior detached part with an anterior projection which is more pronounced than in *gravida*, the middle band also sometimes detached from the white marginal streak; pubescence of the front coarser, whiter and less abundant. Length (♂♀) 11.5–13.0 mm.; width 4.7–5.35 mm. California (Sacramento).

Differs from *gravida* principally in the much more acute elytral apices, especially in the female, the sides posteriorly being more oblique behind the dilation near basal third, which is even stronger and more abrupt than in *gravida*.

19—The *dorsalis* group occurs exclusively on or immediately behind sea-beaches from New England far into the tropics and consists of numerous species, which are strikingly similar among themselves. The following new forms seem worthy of description:

Cicindela munifica n. sp.—Form, sculpture and ornamentation as in *dorsalis* but much larger, the head and prothorax notably larger, the latter more transverse and with the sides at base more swollen; labrum larger, relatively less abbreviated; vertex rather more deeply concave; elytra (♀) more strongly angulate and deplanate at the sides near basal third; under surface similar, except that the last ventral (♀) is more broadly truncate; legs a little less slender. Length (♀) 15.0–16.0 mm.; width 6.4–6.6 mm. Rhode Island.

On actually comparing it with *dorsalis* this species seems much more distinct than might be inferred from the description, the very large prothorax, somewhat wider than the head and the more strongly angulated elytra near basal third, together with the greater convergence of the sides from the angulation to the tip, the latter being relatively less obtuse, impart an evident difference in habitus.

Cicindela apricoidea n. sp.—A little larger and stouter than *saulcyi*, obscure æneous, the under surface æneous with green reflections; head large, shining, the labrum well developed, the anterior edge almost even, with the tooth long and very acute; prothorax rather narrower than the head, feebly alutaceous, the sides at base distinctly swollen, the white pubescence as usual; elytra (♀) only very feebly swollen at the sides near basal third and broadly rounded, thence feebly narrowing to near apical third, the sides then rapidly converging to the rounded and finely serrulate apices. Length (♀) 10.5–11.0 mm.; width 4.2 mm. Sea-beaches of Louisiana and Mississippi. Four very homogeneous examples.

The examples at hand all have the elytra white, the suture narrowly dark, more broadly so basally and slightly green in the intra-humeral impression; the punctures are fine but rather close-set. *Apricoidea* is larger and stouter than *saulcyi* and has a very much larger head; it is correspondingly smaller than *media* of the southern Atlantic coast and relatively much more abbreviated, with less pubescent medial parts of the pronotum, very much more swollen sides of the thoracic base and more obtuse lateral prominence of the sides of the elytra in the female; indeed there is scarcely any prominence at all. This species however almost exactly resembles *castissima* Bates, as figured, but the prothorax is relatively smaller and more trapezoidal, the elytra more parallel at the sides, less narrowed behind, the apices rounded and not quasi-truncate and, finally and most decisively of all, the labrum has a strong and acute medial tooth as usual; it is said to be edentate (!) in *castissima*, the type of which is also a female.

Of *dorsalis* there is a form well known and generally found in company with it, that has lost nearly all the dark lines of the elytra, the latter being white, excepting the suture expanded slightly at the middle and a feeble intra-humeral streak. This is simply an albino form of *dorsalis* in all probability, as examples occur which are intermediate in marking.

Semipicta Csy. is a species readily distinguishable from *dorsalis* by its more elongate and subparallel form, much less abbreviated

labrum, retracted sides of the thoracic base and fine lineiform dark elytral markings, the posterior of the longitudinal lines but feebly arcuate and not tending at all to approach the suture at its posterior end; the sculpture of the pronotum also is sensibly different, being a very fine irregular vermiculiform rugulation in the type, though this possibly may not be constant.

21—A number of undescribed forms in the *circumpicta* group have been in my cabinet for many years; those most easily identifiable are as follows:

Cicindela circumpicta ssp. **ambiens** nov.—Similar to *circumpicta* but dark indigo-blue in color, the head and prothorax paler and more lustrous blue, the latter greenish, the under surface very deep blue and partially black; head, labrum and antennæ similar; prothorax similar but as long as wide; elytra much shorter and relatively broader, three-fifths longer than wide, similarly sculptured and ornamented but duller in lustre, with the punctures smaller and rather less close-set, becoming very fine and more obsolescent apically than in *circumpicta;* pubescence of the under surface similar. Length (♂) 12.5 mm.; width 4.9 mm. Kansas.

The much shorter hind body, coloration and dull surface will enable one to recognize this subspecies very readily.

Cicindela circumpicta ssp. **inspiciens** nov.—Similar to *circumpicta* but blackish, with æneous lustre, more shining; labrum similarly very short but with the median part, bearing the three strong teeth, more advanced; head very shining, with coarser and less numerous plications, which are almost obsolete toward the eyes, the vertex deeply concave, the eyes similarly very prominent; prothorax similar but less rounded at the sides and with the polished surface devoid of any kind of sculpture, except between the sulci and the apical and basal margins; elytra similar in their elongate parallel form and ornamentation, but with the surface more shining and the punctures everywhere sparse, particularly toward base, where they become closer in *circumpicta;* white pubescence at the sides of the under surface still closer, extremely dense. Length (♂) 13.0 mm.; width 4.65 mm. Texas (Point Isabel).

Distinct in the very shining surface, blackish-æneous color and sparse punctures. The female seems to be much less abundant than the male in this part of the *circumpicta* group; it has the elytral apices rounded as in the *togata* group.

In regard to forms of the *prætextata* type, Prof. Wickham some years ago obtained a series in southwestern Utah—a zoological region also extending for a long distance to the southward—the

individuals of which are very similar to those of another series, already in my collection from western Texas, except that the median fascia is much more oblique, unenlarged and rounded at tip. In the Texas form this fascia is much less oblique and its tip is expanded, with the apex rectilinearly truncate in a direction exactly parallel with the suture. These I had labeled *prætextata*, and they are apparently the typical *prætextata* of collections generally. In regard to this, the following paragraph concluding the original description of *prætextata* Lec., (Proc. Ac. Phila., 1854, p. 220) is particularly illuminating:

"Two males found on the 'San Diego trip' differ from the type by the more brilliant coppery color of the upper surface, the more distinct punctures of the elytra, and by the middle band of the elytra being gradually dilated internally and truncate, while in the type it is rounded at tip and not dilated."

For this reason it must be held obvious that the Utah examples cited are the typical *prætextata* and the following are two subspecies:

Cicindela prætextata ssp. **fulgoris** nov.—Similar to *prætextata* but relatively more elongate, with the coloration usually more brightly cupreous-red, the pubescence at the sides and apices of the prothorax more abundant, the elytra fully a fifth longer and with the middle band much less oblique, not approaching so closely to the anterior expansion of the apical lunule, and with its apex not unexpanded and obtuse but more or less dilated and rectilinearly truncate in a direction perfectly parallel with the suture; elytra (♀) rather less obtuse behind and with the individual apices less broadly rounded. Length (♂♀) 11.5–12.5 mm.; width 3.8–4.6 mm. Texas (El Paso and also with unrecorded locality).

My series of the typical *prætextata* consists of five individuals, all females, having the dimensions 10.5–12.5 mm. by 4.0–4.8 mm.

Cicindela prætextata ssp. **stringens** nov.—Similar to *fulgoris* but a little stouter and with more greenish-cupreous lustre, the maculation similar, except that the marginal stripe near the base is deeply sinuate within; elytra distinctly shorter, only about two-thirds to three-fourths longer than wide; apices of the elytra (♀) similar but more broadly rounded. Length (♀) 13.0 mm.; width 4.6 mm. Texas (El Paso),—Dunn.

In *fulgoris* it will be noted that the basal part of the wide lateral white margin, corresponding to the basal lunule, is virtually parallel-sided, while here it is deeply sinuate within very near the base; in the true *prætextata* this part is also sinuate internally but less so

than in *stringens;* although apparently a trivial character, this is very constant throughout a good series of *fulgoris* and five examples of *prætextata.*

22—The *togata* group is closely allied to the preceding and has a generally similar style of ornamentation, but the head is densely pubescent, almost as in the *gratiosa* group, to which it is also allied. The following is specifically different from *togata:*

Cicindela globicollis n. sp.—Coloration, sculpture, vestiture and ornamentation almost exactly as in *togata,* but much smaller in size and of shorter form; labrum moderately and broadly produced medially, with a feeble medial sinuation, from the bottom of which projects an acute tooth, the sinus narrower and stronger and the tooth a little longer in the female; head noticeably smaller; prothorax less cylindric and with still much more arcuate sides, giving a subglobular appearance; elytra (♂) with the sides gradually rounding and oblique to the acute and spinulose tips, or (♀) more broadly, obtusely rounding to the tips, which are rounded to the only very slightly retracted but similarly spinulose angles. Length (♂♀) 9.8–10.6 mm.; width 3.6–4.2 mm. Kansas (Clark Co.),—F. H. Snow. Three examples.

Differs specifically from *togata* in the form of the elytral apices of the female, the tips there being more rounded and the spine representing the sutural angle very greatly retracted and projecting from the edge of the suture; the male apices do not differ appreciably from those of *togata.* This form seems to resemble *apicalis* W. Horn, and may possibly prove to be a variety of that species, but it is much smaller in size and apparently has a more globular prothorax; in the absence of examples of *apicalis,* I am unable at present to supplement these with other indicated differences. The differences between the *apicalis—globicollis* section of this group and *togata* are exactly parallel to those between *hamata* and *marginata* of the *marginata* group; since the latter two are maintained as distinct species, apparently with justice, although they have identical markings, I think analogy should determine *apicalis,* with its analogue or possible variety *globicollis,* to be specifically different from *togata.*

23—The following is a very striking and beautiful variation of *lepida:*

Cicindela lepida ssp. **insomnis** nov.—Nearly as in *lepida* but with a larger head, more prominent eyes and somewhat narrower and more

elongate, though similarly ornamented, elytra, except that the posteriorly oblique part of the middle band is shorter; color differing, the head and prothorax being of a pure and brilliant green and with the pubescence less dense than in *lepida*, the hairs being largely wanting toward the eyes and on certain median parts of the pronotum. Length (♂) 10.0 mm.; width 3.8 mm. Kansas (Seward Co.).

The very pale hairy legs, though of radically different type of hairiness from that of *Dromochorus*, and the pale antennæ and pallid elytral suture, are remarkable characters in the *lepida* group, isolating it from every other American stem form.

25—In the *marginata* group there are two well marked sections, one composed of those species having a median basal pallid spot on each elytron, such as *blanda*, *hamata*, *marginata*, *cuprascens*, *macra*, *puritana* and *wapleri*, and the other, similar in every other way but without trace of this median basal spot, such as *sperata*, *inquisitor*, *marutha*, *knausi* and probably *nevadica*, which I do not know in nature. It seems rather surprising that some recent authors should have failed to appreciate the differences between *cuprascens* and *macra*, as there is no very great mutual resemblance. *Cuprascens* is one of the most beautiful species of the genus, the very bright cupreous-red, coarsely and subconfluently punctured elytra having the ivory-white markings common to this group, but all embossed to a conspicuous degree. In *macra* the elytra are much more elongate, more finely punctate, cupreous-brown to dull greenish in color and with the markings embossed only toward base and very slightly even there; I have a large series from Indiana to Kansas. The following three forms belong to the first section of the group as above defined:

Cicindela macra ssp. **mercurialis** nov.—Similar in form and ornamentation to *macra* but rather less pubescent and with the prothorax longer and more cylindric, with very nearly straight sides, longer than wide and blackish, with feeble æneous lustre, the elytra obscure green, twice as long as wide, the sides straight and parallel to apical fifth, thence rather abruptly oblique to the acute and minutely spinose angles; punctures as close-set as in *macra* but very much coarser and transversely submuricate, not so coarse, rounded or close-set as in *cuprascens;* tibiæ and tarsal joints testaceous, all blackish toward their apices. Length (♂) 12.0 mm.; width 3.5 mm. Iowa.

Differs from *macra* in the longer and more rectilateral prothorax and very markedly in the type of elytral sculpture.

Cicindela cuprascens ssp. **amnicola** nov.—Similar to *cuprascens* in general form, but still a little more abbreviated, the elytral markings similar but narrower and less embossed, the punctures strong and close-set but not quite so coarse; color blackish, with feeble æneous lustre, the elytra paler and more cupreous-brown to greenish; elytra with the sides parallel but less rectilinear than in the preceding, in the female abruptly, strongly and rectangularly dentate at just behind apical fifth, the combined elytra thence arcuately narrowing to the rounded apex, the apices not produced. Length (♂♀) 10.0–11.7 mm.; width 3.4–4.0 mm. Kentucky, Illinois and Missouri.

Distinct from *cuprascens* in its slightly more abbreviated form, in sculpture and ornamentation.

Cicindela mundula n. sp.—Form nearly as in *cuprascens* and with similar though narrower and scarcely at all embossed markings; head and prothorax bright cupreo-æneous, with the hairs shorter and less numerous, the elytra coppery-brown, less closely or coarsely punctate, the subsutural line of foveæ distinct; labrum short, transverse, with a single small acute tooth; prothorax (♀) parallel, with rather arcuate sides, nearly a fourth wider than long, the sulci rather feeble; elytra (♀) as in *amnicola* but slightly more elongate, the very abrupt sharp angulation more posterior and at about apical sixth, the combined elytra thence much more narrowed and lobiform, each apex more strongly rounded and somewhat produced, with fine but strong serrulation. Length (♀) 12.0 mm.; width 4.0 mm. Mississippi (Vicksburg).

The outline of the elytral apices induces me to treat this as a rather important taxonomic form, though with a value that it is difficult to define accurately with our present knowledge of the group.

26—It is quite certain that *chihuahuæ* Bates—now known in our collections as *micans* Fabr.—is specifically different from *punctulata;* it is larger, more elongate, more coarsely sculptured and differs constantly and very markedly in color; but in this case *boulderensis* would also have to have the specific status, as it differs from both in the obsolescent foveæ of the subsutural line and in having the punctures very fine suturally though strong laterally; it agrees with *punctulata* in color but differs in its narrower and more elongate form.

29—The specimens in my collection serving to represent *abdominalis* do not fulfill the descriptions very well, being much smaller and very deficient in white elytral spots, there being only an apical lunule and a small discal spot representing the anterior end of the middle band, and this is only to be seen in two out of the five

examples; they are from Florida and Louisiana and are probably subspecifically different from the New Jersey form. The following is another rather remarkable subspecies:

Cicindela abdominalis ssp. **faceta** nov.—Similar in size and general form to *abdominalis*, not black but with a strong and subalutaceous violet lustre, wanting on the black anterior parts; hairs forming the lateral pronotal vittæ short and rather inconspicuous; elytra with rather fine but distinct, sparse, subæneous punctures, the green foveæ large and conspicuous; white spots on each elytron numerous, one representing the posterior end of the humeral lunule, two the anterior and posterior ends of the middle band, one elongate marginal near apical third, one smaller discal on the median line at apical fifth and a complete and full apical lunule; legs pallescent. Length (♀) 9.7 mm.; width 3.4 mm. A single example without indication of locality.

The coloration and maculation are different from any noted in descriptions.

Cicindela extenuata n. sp.—Slender, with the usual narrow prothorax, broad head and prominent eyes, highly polished, black throughout, the abdomen red, the femora pallescent; labrum broadly produced, sinuato-truncate and edentate medially at tip; prothorax longer than wide, slightly narrowed toward base, the sulci narrow and shallow, the transverse decumbent hairs composing the lateral pronotal vittæ very coarse, white, close and conspicuous; elytra gradually expanding with nearly straight sides to apical fourth, then broadly and obtusely rounding through the combined apex, the serrulation excessively minute; surface with relatively coarse, close-set punctures, becoming rather sparse suturally, the foveæ large and deep but not at all metallic, the sole maculation consisting of a full apical lunule, an elongate marginal spot at apical third and a minute embossed discal spot representing the posterior end of the middle band; white pubescence along the sides of the under surface dense and very conspicuous. Length (♂♀) 7.5–8.5 mm.; width 2.5–3.0 mm. Florida (Crescent City),—Schwarz.

Allied without doubt to *scabrosa* Schaupp, but very much smaller, the length of that species being given by both Schaupp and Leng as 10.5 mm. The vittæ of transversely placed white hairs at the sides of the pronotum are so conspicuous that they would undoubtedly have been alluded to by Schaupp if so distinct in *scabrosa;* these hairs are short, finer, very sparse and inconspicuous in my southern examples of *abdominalis*, and, if the deep foveæ of the subsutural line were deep black and without trace of the metallic color seen in *abdominalis*, I think this also would have been observed.

30—Under the name *politula* Lec., I have had two forms, which

differ very much in general outline of the body, as well as in the form and extent of the apical white marking. The true *politula* has the elytra nearly or quite twice as long as wide in the female, parallel, with the sides feebly arcuate to the apical rounding beginning at about apical fifth, and the only white maculation is a slender marginal dash occupying the median part of the apical arcuation on each elytron and widely separated from the sutural angles.

Cicindela politula ssp. **cribrum** nov.—Color, sculpture and shining elytra as in *politula*, the head and prothorax with less metallic blue at the sides and in the sulci; head a little smaller, the lines forming the inner margins of the eyes more convergent; labrum similar, the apex truncate medially, with a single very minute blackish denticle; elytra glossy, deep black, the lateral margin very finely bluish, one-half longer than wide, the sides very feebly arcuate, rather strongly diverging from the base to about apical fourth, there gradually and broadly rounding semicircularly about the apex, the sutural angles minutely spiniform, the serrulation extremely minute; surface with evenly distributed strong punctures, finer apically; white maculation consisting of a full long apical lunule, from the angles to apical fifth but not much swollen at its extremities. Length (♀) 11.8 mm.; width 4.2 mm. Texas.

A very distinctly marked form allied to *politula* and probably of higher value than the subspecies.

31—The *rufiventris* group comprises three distinct sections or subgroups, represented first by *rufiventris* and *cumatilis*, secondly by *hentzi* and *16-punctata* and thirdly by *hæmorrhagica* and *arizonæ*. I have in my collection an undescribed form in each of these subgroups as follows:

Cicindela rufiventris ssp. **collusor** nov.—Form shorter than in *rufiventris*, the coloration similar, except that the elytra are a little more shining, subcupreous, and, toward the lateral edges, are more convexly declivous, with a broader purple stripe along the beading; labrum with the median produced lobe much broader, the single tooth longer, spiniliform; head and prothorax similar but less opaque; elytra similar in form but a little shorter and relatively broader, differing greatly in sculpture, the punctures being much coarser and very close-set, the pale markings on each consisting of a small point representing the posterior end of the humeral lunule, an elongate spot near the edge at posterior third, a very small discal point on the median line near apical fifth and a well developed apical lunule which is inflated near the suture. Length (♀) 11.5 mm.; width 4.5 mm. A single example without indication of locality from the Levette collection.

This form also is probably of greater value than the subspecies, but is placed in that category for the present.

Cicindela sedecimpunctata ssp. **sonorana** nov.—Similar to *16-punctata* but paler and more cupreous-brown, sometimes with a darker cloud on each elytron which never extends to base, apex or sides but within which the metallic punctures are much reduced or obsolescent, the maculation differing in having the two obliquely placed medial spots connected by a fine oblique line and the apical lunule entire. Length (♂ ♀) 8.2–11.8 mm.; width 2.6–4.0 mm. Arizona, New Mexico and southward to Durango. Very abundant.

This is probably a mere subspecies of *16-punctata*, but the binding of the two pairs of spots—medial and apical—is constant here; they are isolated in that species and the color is bluish-black. The female, as in the *hæmorrhagica* section, is much larger than the male; in the present form the female is much less abundant than the male, which is not the case in *hæmorrhagica* or allied species, where the female seems to be somewhat more abundant than the male.

Cicindela woodgatei n. sp.—Form, coloration and sculpture nearly as in *hæmorrhagica*, but very much smaller, with relatively larger head and prothorax and shorter elytra; labrum short, transverse, the single tooth minute, the median parts less advanced and the tooth less evident than in that species; head and prothorax similar in general form, color and relationship, but with the transverse sulci more sharply impressed; elytra similar in maculation, except that the inner oblique part of the median band is very much less extended posteriorly. Length (♂) 9.0–10.8, (♀) 11.0–12.0 mm.; width (♂) 3.2–3.7, (♀) 3.9–4.6 mm. New Mexico (Jemez Springs),—John Woodgate. Abundant.

This would seem at first to be a small variety of *hæmorrhagica*, but there is so much difference in the proportional extent of the anterior parts and hind body and in the form of the middle band, that I can see no other just disposition of it than as a distinct species; the longitudinal extent of the middle band is only about half that of *hæmorrhagica*.

If there were any definite meaning to be attached to the term "aberration," it would apparently apply better to the form described under the name *pacifica* by Schaupp, than any other that can be recalled at present, that variety being simply *hæmorrhagica* in which the white maculation of the elytra has failed to develop; but the positions normally occupied by these markings are plainly evident by reason of differences in the sculpture, and they are the same and are of the same extent as in the normally marked individuals.

CARABIDÆ.

Omophron Latr.

The species of this genus are evidently more abundant and diversified in North America than in the palæarctic fauna and new forms are continually being brought to light; the following is allied to *americanum* but is obviously different:

Omophron fontinale n. sp.—Coloration throughout almost exactly as in *americanum;* body more broadly oval and less elongate; head nearly similar; prothorax a little shorter and more transverse, the sides more converging from base to apex and more arcuate, the punctures similarly aggregated toward apex and base but smaller and less close; elytra with the striæ fine but strong, the punctures fine, moderately close-set, becoming widely separated in the lateral striæ; intervals nearly flat, becoming moderately convex toward the sides; basal joint of the hind tarsi much longer than the next two combined. Length 5.5–5.7 mm.; width 3.4–3.6 mm. New Mexico (Jemez Springs),—Woodgate.

The shorter, more oval outline of the body and the very much finer elytral striæ and punctures, with flatter intervals, cause this species to present a very different facies from *americanum*, in spite of the general similarity in coloration.

Omophron iridescens n. sp.—Similar in coloration to *americanum* but rather narrower, more oval and with a slightly smaller head, on which the pale chevron is broader and with the converging sides straight and not arcuate, as they are in that species, the punctures smaller and sparser; prothorax similar but with the punctures toward apex and base less coarse and not so numerous; elytra with similarly deeply impressed but more approximate and relatively still more coarsely punctate striæ; tarsi very slender, the basal joint of the posterior in the male unusually short, not longer than the next two combined. Length (♂) 5.4 mm.; width 3.0 mm. Mississippi (Vicksburg).

The black areas have more of a greenish metallic lustre than in *americanum* and the deep elytral striæ are still more approximate; by anteriorly oblique light the elytral surface becomes slightly iridescent. In *americanum* the basal joint of the hind tarsi is very much longer than the next two combined.

Omophron frater n. sp.—Oblong-oval in form, convex, shining, pale yellowish, the dark spots slightly exceeding the pale in area on the elytra and metallic green; head finely, sparsely punctate, with a narrow pale chevron behind the clypeus; prothorax rather more than twice as wide as long, finely, not densely punctate, largely impunctate transversely along the middle, the sides subparallel in basal, converging in apical,

half, but rounded medially, the median groove strong; color metallic green, the side margins, extending inward broadly at apex and narrowly at base to about lateral fourth, pale; elytra about as long as wide, but little wider than the prothorax, obtusely rounded behind, the striæ fine and moderately impressed, the punctures rather small and close-set; maculation rather solid, the basal fascia very narrow near the middle, trilobate externally, the second composed of two large spots, one adjoining the suture, the other lateral, the third of the usual biserrate form; suture broadly dark throughout, except at tip, the portion behind the third fascia broad but only feebly enlarged apically. Length 5.7 mm.; width 3.3 mm. California (locality not recorded).

Resembles *gemma*, differing in the less evenly arcuate but more apically narrowed prothorax, less rounded sides of the elytra, broader outline and relatively somewhat shorter basal joint of the hind tarsi; the punctuation and striation are almost similar but more close-set in *frater*.

In the *obliteratum* group the coloring is identical or very nearly so throughout, and the first joint of the hind tarsi much longer than the next two. The following forms seem to be worthy of adoption but would appear to be rather subspecifically connected than of full specific value:

Rather broadly oval, the dark colors predominating and without or with but little metallic lustre; head with a parabolic pale chevron behind the epistoma, the punctures sparse; prothorax but little more than twice as wide as long, moderately narrowed and with feebly arcuate sides from base to apex, rather strongly, sparsely and irregularly punctate throughout, dark throughout except narrowly along the sides and in a transverse antero-lateral area; elytra rounding at the sides basally, the striæ moderate, impressed, rather strongly and not very closely punctate, the intervals moderately convex, the three transverse dark areas broadly uniting with a large medial area before the middle, the zigzag third fascia more solid than usual, the sutural stripe rhomboidally expanded near the apex. Length (♀) 6.8 mm.; width 3.9 mm. Arizona (Yuma).... **obliteratum** Horn

A—Similar, except that the punctures of the head are stronger and more numerous, the elytra a little broader, with the punctures coarser and the interspaces more convex, especially in the male, the sutural posterior extension of the dark area not rhomboidally expanded near the apex but broad and oval and with arcuate sides. Length (♀) 6.6 mm.; width 4.2 mm. Sonora.... ***sonoræ** Csy.

B—Nearly similar but less broadly oval, with the pallid areas whiter and contrasting more sharply with the dark areas, which are a little less extended; head a little smaller but otherwise as in *obliteratum;* prothorax similar; elytra slightly more elongate, the sides from the humeral rounding to about apical third straighter,

the striæ much finer, feeble, with rather strong but very widely spaced punctures throughout, the intervals only feebly convex; sutural stripe behind the third fascia narrower, more abruptly though very moderately, rhomboidally expanded at apex. Length (♀) 6.5 mm.; width 3.7 mm. Utah (Leeds and St. George),—Wickham..... **utense** n. subsp.

C—Stouter and larger, nearly as in *obliteratum* but broader, the head more strongly, closely and irregularly punctate; prothorax more elongate, scarcely twice as wide as long, nearly similar in outline and punctuation but relatively much smaller, the elytra more inflated and rounded basally, the sides thence feebly converging and straight to near apical third, with the elytral flanks above them somewhat concave; striæ and punctures strong, much closer in the deep lateral series and visible nearly to the apices; sutural dark stripe behind the third fascia parallel and straight at the sides to the tip, fading out apically but not at all expanded. Length (♀) 7.0 mm.; width 4.7 mm. New Mexico.

subimpressum n. subsp.

If the impressions of the elytral flanks should prove to be a constant character, this feature, together with size, the more abruptly narrowed prothorax and coarse close lateral striæ and punctures of the elytra, would undoubtedly prove *subimpressum* to be a very distinct species, but it is difficult to decide with but a single specimen at hand. I also think that *utense* is in reality rather a species than a subspecies, but am less convinced in regard to *sonoræ*, the status of which is probably truly varietal. My identification of *obliteratum* is wholly through published descriptions.

In the same way the forms clustering about *gilæ* Lec., may be defined as follows:

Broadly oval, pallid in color, the dark areas much reduced; dark area at the base of the head with a bilobate median projection; prothorax short, more than twice as wide as long, the sides strongly converging from base to apex and feebly arcuate; surface coarsely, sparsely punctured throughout its extent, having a median dark and greenish-metallic transverse spot, continued laterally by a brownish area and connected with the base at its ends; elytra moderately rounding at the sides to the base of the prothorax, having a dark scutellar spot narrowly extending along the base and prolonged backward laterally in three short lines, the second fascia consisting of two spots, one triangular, with the apex on the suture and one more quadrate and lateral, the third fascia consisting of two external spots and one subsutural, arcuately connected; suture narrowly dark throughout, with a small rhomboidal apical dilatation; striæ rather fine internally, very deep and close laterally, the punctures strong, very close-set in the lateral grooves; dark areas brown or feebly metallic-green;

tarsi as in the preceding group. Length 5.7–6.8 mm.; width 3.5–4.2 mm. Arizona (Gila River Valley).....**gilæ** Lec.

A—Similar to the preceding but more narrowly oval, the dark areas still more restricted and paler brown, without metallic lustre or only feebly and partially greenish-metallic, the prothorax with the sides evidently less converging from base to apex, the elytra less abbreviated, being very nearly as long as wide, the striæ very fine and feeble, with moderate and widely spaced punctures and flat intervals internally, the striæ a little coarser, more approximate, rather coarsely and closely punctate and with feebly convex intervals laterally. Length 5.7–6.5 mm.; width 3.5–3.8 mm. Utah.....**pallidum** Csy.

B—Similar to *gilæ* in its short and very broad form but less convex, the dark areas of similar extent and disposition but bright metallic green throughout, the prothorax as in *gilæ* but shorter and more transverse, two and one-half times as wide as long, much more sparsely, less coarsely and more unequally punctate, the green median bar extended laterally in only a very feeble brown tint, the median line similarly dusky; elytra much shorter than wide, more broadly obtuse at apex, the striæ internally very fine and feebly impressed, with rather small and widely separated punctures and flat intervals, or, externally, closer, coarser and deeper, more coarsely and less distantly punctate and with convex intervals, these characters however less noticeable than in *gilæ;* rhomboidal subapical spot on the suture obsolescent. Length 6.2 mm.; width 3.9 mm. Arizona (locality not recorded).

pimalis n. subsp.

Lacustre and *texanum* are rather closely related, but the latter is more inflated, more deeply striate, with more convex intervals and more converging sides of the prothorax; they belong to the *americanum* group, but are very much broader in outline than that species.

A list of all our species, embodying the above conclusions, would be as follows:

labiatum Fabr.
nitidum Lec.
americanum Dej.
iridescens Csy.
lacustre Csy.
texanum Csy.
fontinale Csy.
ovale Horn.
concinnum Csy.
tessellatum Say.
    ssp. ellipticum Csy.
grossum Csy.
dentatum Lec.
solidum Csy.
frater Csy.
gemma Csy.
obliteratum Horn.
    ssp. sonoræ Csy.
    ssp. utense Csy.
    ssp. subimpressum Csy.
gilæ Lec.
    ssp. pallidum Csy.
    ssp. pimale Csy.
robustum Horn.
brevipenne Csy.

Brevipenne must be very closely allied to *robustum*, the form and sculpture being almost exactly the same, but the black suture, expanded before the apex into an unusually large transversely rhomboidal area, is a character wholly at variance with *robustum*, as described by Horn, and this, in conjunction with the widely separated habitats—Nova Scotia and Ohio—leads me to believe that we have to deal with two distinct though allied species.

Leistus Fröh.

The following belongs near *ferruginosus* Mann:

Leistus nigropiceus n. sp.—Form rather slender, moderately convex, polished, piceous-black to castaneous in color, the legs concolorous, the antennæ very slender, testaceous, with the basal joint a little darker; head smooth, four-fifths as wide as the prothorax, the sides very rapidly oblique behind the eyes; prothorax three-fifths wider than long, strongly rounded and dilated at the sides, strongly narrowed basally, the sides deeply sinuate for a short distance before the right and very sharp angles; impressions rather deep and punctured, the median stria feeble; sides abruptly but not broadly reflexed; elytra two-thirds longer than wide, two-fifths wider than the prothorax, rather distinctly broadening posteriorly, the sides broadly arcuate; humeri broadly rounded; striæ fine, distinctly but finely punctate, impressed, the intervals feebly convex, the third with three distinct foveæ near the third stria; legs rather long, slender. Length 7.4–8.0 mm.; width 2.65–2.8 mm. British Columbia (Metlakatla),—Keen.

This is probably the form appearing in our lists under the name *piceus* Fröh., but on reading the description of *analis* Dej., which is said to be synonymous, it appears clear that *nigropiceus* has the anterior thoracic impression much deeper, since it is as deep as the basal, and the median line feebler. It is more slender and with more cuneate elytra and larger head than *ferruginosus* and appears to be very abundant.

Pelophila Dej.

The species of this genus are northern subarctic in range and, though probably rather numerous in Alaska and various parts of the Hudson Bay regions, are so far as described very few in number. The following species was sent to me under the name *ulkei*, but is evidently different:

Pelophila shermani n. sp.—Moderately stout, convex, shining, æneous-black, the legs and antennæ black throughout; head four-fifths as wide as the prothorax, smooth, moderately biimpressed, the impressions

feebly rugose; antennæ (♂) stout, about half as long as the body, or (♀) shorter, two-fifths as long as the body; prothorax nearly three-fifths wider than long, the sides strongly rounded anteriorly, converging and becoming strongly sinuate basally, the angles sharp, generally less than right and somewhat everted, the sides narrowly but distinctly reflexed, strongly so basally, the anterior impression feeble and sparsely punctate, the basal deep and a little less sparsely punctate, the impressions near the angles very deep and conspicuous; median line strongly impressed; elytra two-thirds (♂) to three-fourths (♀) longer than wide, the base much wider than any part of the prothorax, widest near apical third (♂), or nearly parallel (♀), the sides broadly arcuate; humeri distinct though rounded; striæ broadly impressed, very obsoletely and irregularly punctate, the intervals strongly convex, generally somewhat alutaceous; legs uniform in color throughout, brownish-black. Length 9.0–10.4 mm.; width 3.6–3.9 mm. Labrador (West St. Modest),—John Sherman.

The large foveæ of the elytra exhibit the most astonishing diversity among the three males and two females sent to me by Mr. Sherman and one female—the type—has the outer half of each elytron reddish-brown; in all the examples the lateral margin is greenish in lustre. In the type example the third interval has about four foveæ on each elytron, the fifth two on the right elytron but none on the left. In the second female the third interval has three foveæ on the right, five on the left, the other intervals not foveate. In the first male each elytron has only three or four foveæ on the third interval; in the second, the third interval of each elytron has about three foveæ, the right without other foveæ but the left with a single large fovea on the fifth interval and slightly before the middle. In the third male, the third interval of each elytron has four or five foveæ, the fifth interval of the right two, of the left four. The foveæ are so large as to interrupt the intervals in all except the second female, where they are not on the interval but rather in the sulcus between the third and fourth intervals, partially extending across but not interrupting the third. In all other respects these specimens, which came to me under the names *ulkei* and *rudis*, are so perfectly similar that it appears impossible that there should be more than one species. It is a rather remarkable case of instability but affects the elytra only.

Notiophilus Duméril.

The two following species have been in my collection for many years and, so far as it is possible to discover, have not been described hitherto.

***Notiophilus chihuahuæ** n. sp.—Parallel, rather depressed, shining, black, the upper surface with but very feeble metallic lustre; head subequal in width to the elytra, with very coarse subocular grooves and coarse median plicæ, the latter some six in number; labrum deep black, opaque, finely medially striate, narrowed at apex, less than one-half wider than long, the apex truncate and only about half as wide as the base; prothorax of the usual form, sinuately narrowed toward base, coarsely, closely punctured laterally and toward apex and base, the basal impressions distinct; elytra with seven impressed discal striæ which are strongly and closely punctured, the striæ distinct though only obsoletely punctate apically, the inner and outer striæ more widely separated, the sutural and marginal distinct and closely punctate, Length 5.4–5.6 mm.; width 1.8 mm. Mexico (Sierra Madre Mts., Chihuahua),—C. H. T. Townsend. Two examples.

Resembles *semistriatus* but differs in the peculiar opaque and anteriorly narrowed labrum and larger size. It is one of the larger species of the genus.

Notiophilus evanescens n. sp.—Small, elongate-oval, rather convex, strongly shining, black throughout, the upper surface with strong bronzy lustre; head decidedly narrower than the elytra, the subocular grooves deep and more acutely impressed than in the preceding, the plicæ six in number, the labrum very short and transverse, shining and bronzy; prothorax only moderately narrowed and with almost straight sides toward base, the peripheral punctures of the upper surface close-set but notably fine, the basal impressions narrow and rather feeble; elytra more oval than usual, convex, the seven discal striæ subequally and rather widely spaced, fine, feeble and finely, remotely punctate even basally, becoming vestigial and scarcely at all punctate behind about the middle, the sutural and marginal striæ subsimilar to the others. Length 4.2–4.6 mm.; width 1.5 mm. Colorado (Boulder Co.). Six examples.

Somewhat related to *æneus* but differing in the much shorter labrum, much less sinuate oblique sides of the prothorax, with denser pronotal punctures, and in its much smaller size.

Nebria Latr.

In this genus, which is much more extended in its range, it is probable that hardly more than a third of our species have been described—as a conservative estimate. They are assignable to seven well defined groups, of which the typical species are *ingens*, *gregaria*, *diversa*, *metallica*, *obliqua*, *virescens* and *pallipes*. These groups are not exactly equivalent to those suggested by LeConte, for in my opinion *diversa* should be a group by itself and is not associable with *ingens* and *ovipennis;* it has very short oval elytra,

not one-half longer than wide, but the humeri, which are wholly obliterated in *ingens*, are rounded though as distinct as in many other species, such as *gregaria* or even *eschscholtzi;* it is a remarkably isolated species and without any close ally. Again LeConte puts *mannerheimi* and *eschscholtzi* in a group by themselves and places *gregaria*, *obliqua* and *metallica* in a single group, which he holds to be different from the *eschscholtzi* group. In this I cannot possibly agree; the habitus is very different in the three species mentioned and they should go in different groups. I have assumed *gregaria* to be similar in its features to *trifaria*, having the same very long and subdepressed, posteriorly broadening elytra, with very feeble humeri; both of these species are wanting in my collection, although there are some that are closely allied, such as *mobilis*, *catenata* and *cuneata*. The new forms in my collection may be assigned to the following groups:

Group *ingens* Horn.

This is a small group, composed of two species besides *ingens*, one *ovipennis* Lec., of which I have a very good example from Placer Co., taken by Koebele and the other as follows:

Nebria columbiana n. sp.—Moderately slender, unusually convex, shining, black, the abdomen rufescent apically; legs black, the tarsi piceous; first four antennal joints black, the remainder testaceous; head smooth, with two small and feeble impressions which are obsoletely rugulose; antennæ slender, three-fourths as long as the body; prothorax much wider than the head, two-fifths wider than long, strongly rounded at the sides anteriorly, the sides strongly converging and sinuate posteriorly, becoming parallel and straight for a long distance before the angles, which are very acute and somewhat posteriorly produced, the base truncate between them, less than three-fifths the maximum width; sides moderately reflexed; impressions distinct, almost impunctate, those near the angles deep and with a few punctures; elytra oval, nearly twice as long as wide, one-half wider than the prothorax, widest slightly behind the middle, the sides broadly, evenly arcuate and gradually converging to the base, without trace of humeri, more obtusely rounded behind; surface very convex and shining, brilliant violaceo-cupreous in color, the striæ deeply impressed, impunctate and with strongly convex intervals, having three foveæ on the third, none on the fifth and three on the seventh, all interrupting the intervals; legs and tarsi long and slender, the stiff hairs beneath the latter conspicuous. Length (♂) 10.0 mm.; width 3.9 mm. British Columbia (Inverness),—Keen.

One of the most brilliant and isolated species of the genus; besides

coloration and the smaller size, it differs from *ovipennis* in its more basally narrowed prothorax, shorter, more convex and more deeply striate elytra and longer antennæ.

Group *gregaria* Fisch.

The outline in this group is peculiar and very different from any other in the very elongate, more or less depressed elytra, the sides of which gradually converge with very feeble arcuation from near apical third or fourth to the humeri, which round broadly to the base; so far as identifiable by the writer, the group will comprise, besides *gregaria*, *trifaria* and *purpurata* of LeConte, the following three species:

Nebria catenata n. sp.—Black, with more or less piceous tinge, the elytra sometimes blackish-brown, probably from immaturity; legs and under surface black when mature, the antennæ piceo-testaceous, the four basal joints black; upper surface shining, rather depressed and without trace of metallic coloration at any part; head smooth, much narrower than the prothorax, the two anterior impressions broad and feeble, the usual two rufous spots evident; antennæ slender, three-fifths as long as the body; prothorax fully one-half wider than long, the sides rather strongly rounded anteriorly, thence strongly converging and broadly sinuate to the basal angles, which are right and sharp, the sides feebly punctulate, broadly but very feebly reflexed, except the marginal bead which is elevated as usual, the transverse impressions moderate, finely, sparsely punctate, the lateral basal impressions, at some distance from the angles, elongate and deep; base three-fourths the maximum width, transverse to the broad truncate and feeble lateral posterior projections; median line well impressed; elytra (♂) twice as long as wide and a third wider than the prothorax, or (♀) a little shorter and relatively broader, widest at posterior fourth, the striæ rather fine, moderately impressed and evidently punctured, the intervals broadly, feebly convex, the third, fifth and seventh each with about four or five foveæ, which completely interrupt the intervals and, by the rounding in of the striæ at these points, produce a catenated appearance; legs long and slender. Length 12.5–13.5 mm.; width 4.7–5.2 mm. Colorado—Levette collection.

Evidently allied to *trifaria* Lec., but in that species the head is said to be scarcely narrower than the prothorax, the side margins of the latter strongly reflexed and the elytral striæ impunctate. The series at hand numbers seven examples, which exhibit but little variability, except as to the number of interstitial foveæ; in one example there is only one fovea on the fifth interval, though the others have their normal number.

Nebria mobilis n. sp.—Much more slender than the preceding, depressed, shining, piceous-black, the elytra brilliant and polished metallic green, which changes to violet under very oblique illumination; under surface and legs blackish-piceous; antennæ slender, two-thirds as long as the body, unicolorous throughout and dark testaceous; head smooth, nearly as in the preceding but with rather more evident anterior impressions, much narrower than the prothorax, the latter about two-fifths wider than long, the sides broadly and rather feebly rounded, strongly converging posteriorly and becoming straight and parallel for some distance before the angles, which are right and sharp; sides rather broadly and strongly impressed, the transverse impressions broad and feeble, barely at all punctured, the lateral basal nearly as in *catenata*, the median line well impressed; elytra elongate-oval, only a little wider near apical third, the sides broadly rounding, feebly converging thence to the broadly rounded and feeble humeri, about a third wider than the prothorax; striæ fine, feebly impressed, finely but evidently punctured, the intervals broadly and very moderately convex, the third and seventh interrupted by three or four moderate foveæ, the fifth apparently never foveate; legs long and slender. Length 11.5–13.3 mm.; width 4.4–4.6 mm. Colorado—Levette collection. Three examples.

More slender, depressed and more feebly sculptured than the preceding and with different coloration. It agrees very well with the description of *gregaria*, given by Horn and based upon an Alaskan individual, except that the striæ are punctured and not devoid of punctures as stated of *gregaria*, and with the seventh interval foveate as well as the third—the only one described as being foveate in *gregaria*. From *purpurata* Lec., it differs in its polished elytra, which are said to be without metallic gloss in that species, in having the head distinctly narrower than the prothorax, though less markedly so than in *catenata*, in its shallow and not deep pronotal impressions and in having only the third and seventh, and not the third, fifth and seventh, intervals interrupted by foveæ.

Nebria cuneata n. sp.—Black or slightly piceous, the legs and antennæ rufo-piceous throughout, the elytra feebly rufescent apically, slender, rather depressed, strongly shining; head smooth, much narrower than the prothorax, the anterior impressions feeble; prothorax two-fifths (♂) to one-half (♀) wider than long, the sides rounded anteriorly, converging and sinuate posteriorly, becoming parallel before the angles, which are right or slightly everted and sharp; surface rather broadly concave and feebly punctulate at the sides to the elevated bead, the anterior impression almost obsolete, the posterior broad but rather deep, punctulate, the lateral impressions rather deep and adjacent to the angles; median line well impressed; elytra fully twice as long as wide, oval, widest at about three-fifths, the sides broadly arcuate and moderately converging to the broadly rounded and feeble humeri; striæ fine but rather deeply

impressed, impunctate, the intervals distinctly convex, without large interrupting foveæ, the third with four small setigerous punctures, which are at the outer side and adjacent to but not on the stria; legs slender, moderately long. Length 10.5–10.8 mm.; width 3.9–4.2 mm. Alaska, —Ulke. Four examples.

For many years this species figured in my collection under the name *gregaria*, but on comparing it with the description given by Horn (Tr. Am. Ent. Soc., 1870, p. 100) I am unable to convince myself that it is in any way very closely allied. The size is rather smaller than the 11.5 mm. given as the length of *gregaria* and there is no trace whatever of any metallic lustre, the elytra of the latter being said to have a distinctly bluish-green tinge. It will be noted that although so similar in general habitus to *trifaria*, *purpurata*, *catenata* and *mobilis*, this species and *gregaria* differ radically in having minute setigerous punctures adjacent to the third stria, and not large foveæ interrupting the intervals as in those species. *Bifaria* Mann., I have not seen and so can venture no opinion as to its relationships.

Group *metallica* Fisch.

In this group I would place besides *metallica*, *mannerheimi* and *sahlbergi* Fisch., *gebleri* of Dejean, of which there is an example at hand taken in British Columbia by Prof. Kemp, *eschscholtzi* Mén., which I took in great abundance in California, and probably *rathvoni* Lec., which is unknown to me, the three species described below. With the exception of *sahlbergi* and related forms, such as *mœsta* Lec. and *parvula*, which have a very wide range in North America, this group is confined to the Pacific coast regions. The sides of the prothorax vary from strongly sinuate posteriorly to but little more sinuate than in the *obliqua* group, as for example in *oregona*, which is only placed here and not in the *obliqua* group because of its broad form and habitat, harmonizing better with *mannerheimi* and *metallica* than with *obliqua* in these as well as some other respects.

Nebria tenuipes n. sp.—Moderately stout and convex, cuneiform, shining, rufo-piceous, the elytra and under surface nearly black, the entire antennæ and legs pale testaceous; head smooth, much narrower than the prothorax, the anterior impressions moderate, on a line with the anterior margin of the eyes and separated by a third of the interocular distance; antennæ slender, filiform as usual and two-thirds as long as the body; prothorax slightly less than one-half wider than long, the sides

strongly rounded, strongly converging from about the middle and gradually strongly sinuate to the right and very sharp, subeverted and prominent angles; margins very narrowly reflexed; transverse impressions feebly punctate, the anterior feeble, the posterior rather strong, the lateral impressions moderately deep and very near the angles; median line finely striiform; elytra oval, rather long, three-fourths longer than wide, widest at three-fifths, the sides broadly arcuate, the humeri broadly rounded; striæ rather fine but impressed, finely punctured, the intervals feebly convex, nearly flat laterally, where the striæ are feeble and unimpressed; third stria with three to four strong setigerous punctures at the inner side; legs long and very slender. Length 10.5–11.4 mm.; width 4.3–4.4 mm. California (Alameda and Humboldt Co.) and Oregon (Clackamas Co.).

Allied to *eschscholtzi* but much more elongate, with longer, more cuneiform and less oblong-oval elytra, less transverse prothorax and paler coloration, not black throughout the body as in that species.

Nebria oregona n. sp.—Stout, moderately convex, shining, deep black throughout the body, the legs piceous-black, the tarsi barely paler; antennæ moderately pale, testaceous, the basal joint alone blackish; head smooth, with obsolete impressions, about three-fourths as wide as the prothorax; antennæ filiform, two-thirds (♂) to three-fifths (♀) as long as the body; prothorax a third (♂) to one-half (♀) wider than long, the sides moderately rounded, becoming oblique in about basal half and straight to the slightly obtuse but very sharp basal angles; surface very narrowly but deeply concave and reflexed at the sides; impressions nearly as in the preceding but still less punctured and, on the disk just behind the middle of the length and slightly nearer the sides than the median line, there is a small rounded impression; elytra broad, much wider than the prothorax, a little wider behind the middle than at base, scarcely more than one-half longer than wide, the sides very evenly and moderately arcuate from the rather broadly rounded but very distinct humeri to the posterior rounding; striæ rather strongly impressed, very feeble laterally, finely punctured, the intervals, except laterally, distinctly convex, the third with three or four setigerous foveæ; legs slender, rather long. Length 10.3–11.5 mm.; width 4.3–4.8 mm. Oregon (Clackamas Co.).

This species seems not to be allied closely to any other but may be placed in the *mannerheimi* section of the group.

Nebria arkansana n. sp.—Much narrower than the two preceding, more nearly as in *sahlbergi* but smaller and with less developed head and prothorax, shining, black, the under surface frequently rufescent, the legs piceo-rufous, the entire antennæ testaceous; head small, unimpressed, the antennæ slender, three-fourths as long as the body; prothorax one-half wider than long to a little less, formed as in *sahlbergi*, the sides strongly converging and sinuate posteriorly to the right and very sharp

angles; surface moderately concave and reflexed laterally, the impressions nearly as in *sahlbergi;* elytra oblong-oval, much wider than the prothorax, just visibly widest at three-fifths, the sides broadly arcuate to the very distinct though rounded humeri; striæ feebly impressed, finely, feebly punctate, the intervals feebly convex to nearly flat, the third stria with two to four punctures; legs rather slender but not very long. Length 8.0–9.4 mm.; width 3.1–3.3 mm. Indiana and Arkansas. Five examples.

Differs from *sahlbergi* in its small size, relatively much smaller head and prothorax, the latter less inflated anteriorly, longer antennæ and some other evident features. The small impression at each side of the middle of the pronotum, mentioned under *oregona*, must be a general character to a great extent, as it is visible also in this species and *sahlbergi*, of which I have a large series from Labrador and New Hampshire.

Group *obliqua* Lec.

The species of this group are rather numerous, inhabiting the more eastern and temperate parts of the continent and are particularly abundant in Colorado and neighboring parts of the lower Rocky Mountain system; they are narrower and more elongate than those of the *metallica* group and always have the sides of the prothorax oblique and nearly straight posteriorly to the obtuse though nearly always sharply defined basal angles. I regard provisionally a specimen collected by Mr. Schwarz at Garland, Col., as representing *obliqua*, although there are three or four punctures on the third stria; as it agrees with the description in all other particulars, this plurality of foveæ would seem to be inconclusive, in view of the general variability in this respect. Of *obtusa* Lec., I have a single example taken by Wickham at Provo, Utah. The following three seem to be as yet undescribed:

Nebria incerta n. sp.—Form nearly as in *obliqua* and similarly deep shining black, with piceous legs, but with the hind body relatively shorter and broader; surface without trace of metallic coloration; head smooth, polished and convex, unimpressed; antennæ slender, testaceous throughout; prothorax fully three-fifths wider than long, formed as in *obliqua* but with the anterior transverse impression very feeble; elytra oblong, parallel, two-fifths wider than the prothorax and one-half to three-fifths longer than wide, the sides moderately arcuate, the basal bead meeting the marginal in a very obtuse but evident angle; striæ not very fine but only very feebly impressed, the third with three to five small setigerous foveæ, the intervals almost flat; femora blackish, the tibiæ and

tarsi paler, castaneous. Length 10.0–11.0 mm., width 3.9–4.0 mm. Colorado. Levette collection. One example is marked "Indiana" but this is probably a mistake.

Allied rather closely to *obliqua* but having more numerous strial foveæ and a feebler anterior transverse thoracic impression.

Nebria testaceipes n. sp.—Stouter than the preceding and more convex, shining, dark rufo-piceous, the elytra clear castaneous; entire legs and antennæ pale testaceous; head relatively small, two-thirds as wide as the prothorax, convex, smooth and unimpressed; antennæ (♂) about three-fifths as long as the body; prothorax three-fifths wider than long, the sides rather broadly and strongly rounded, oblique and straight behind, the sides rather broadly and strongly reflexed; transverse impressions very unequal, feebly punctured, the anterior obsolescent, the posterior strong, with the lateral impressions deep and oblique; median stria very fine and feeble; elytra oblong, parallel, with very feebly arcuate sides, three-fifths longer than wide, fully one-half wider than the prothorax, the humeri strongly marked though broadly rounded, the basal bead meeting the marginal in a blunt angulation, so very obtuse as to be scarcely evident; striæ moderate, finely, not closely punctulate, the third with three or four small setigerous foveæ; intervals very feebly though sensibly convex; legs long and slender. Length 10.0 mm.; width 4.1 mm. British Columbia (Glenora),—Wickham. A single male.

This species, though the type may possibly be somewhat immature, is readily seen to differ from *obliqua* in the relatively much smaller head and prothorax, more oblong and less laterally arcuate elytra, pale testaceous legs and other features of structure and habitus.

Nebria texana n. sp.—More depressed and less parallel than in either of the preceding or *obtusa*, rather shining, the elytra polished, black, the legs also black throughout and the antennæ blackish-testaceous; head small, smooth, the anterior impressions feeble but evident and widely separated; antennæ three-fifths as long as the body; prothorax nearly as in the preceding but with the sides more narrowly rounded anteriorly and the oblique posterior part longer; elytra one-half longer than wide, sensibly wider behind the middle than at base, the sides broadly arcuate; humeri less evident than in others of this group, broadly rounded, the basal and marginal beads meeting in an even curve and without trace of junction or angulation; striæ moderately fine, deeply impressed and strongly but not very coarsely punctate, the third with three or four setigerous foveæ; intervals very distinctly convex; legs slender but not very long. Length 10.0 mm.; width 3.9 mm. Texas. A single male example.

Quite distinct from any other of this group in its posteriorly broadened elytra, more depressed surface, impressed and punctured striæ and entirely black legs.

Group *virescens* Horn.

An isolated group in the genus, consisting hitherto of a single species from Vancouver Island. I here venture to add another, based upon rather radical disagreement with the published description of *virescens:*

Nebria brevis n. sp.—Form short and broad, evenly, moderately convex, shining, black with faint dark greenish-blue lustre above, the legs, antennæ and under surface black; head small, smooth, nowhere rugose, having a very feeble oblique sigmoid impression at each side of the vertex; antennæ (♂) filiform but shorter than usual, much less than half as long as the body, piceous distally; prothorax transverse, more than one-half wider than long, widest only just before the middle, the sides almost evenly rounded from apex to the obtuse but sharply defined basal angles, becoming perceptibly straighter before the latter; surface broadly and strongly concave and reflexed at the sides, the anterior impression narrow but distinct medially, the basal broad and rather deeply concave, very finely subpunctulate, the lateral impressions deep, large and anteriorly oblique; base truncate throughout the width, three-fourths the maximum width; elytra short, oblong, not quite one-half longer than wide, parallel, feebly and evenly arcuate at the sides, rather abruptly broadly rounded at apex, the humeri distinct though rounded; striæ fine, very feeble, strongly though finely punctured suturally, the outer ones subobsolete as well as scarcely punctured, the third with two small and feeble setigerous punctures; intervals almost flat; legs slender but rather short. Length 9.0–11.0 mm.; width 3.8–4.25 mm. Oregon (Corvallis, Mayville and Philomath),—Moznette. Five examples.

In *virescens*, according to G. H. Horn, the length is 12 mm., the prothorax only about a third wider than long, with the sides moderately broadly reflexed, and the head near the eyes is said to be subtriangularly impressed and rugose, of which character there is barely a vestige in *brevis*, but the oblique smooth sigmoid impressions are very evident. If the original description is to be relied upon, there can be no doubt that *brevis* is specifically different from *virescens*.

Group *pallipes* Say.

In this peculiar group of the Atlantic regions there are three very sharply differentiated species, almost invariably mingled together in collections. If the elytra in either sex of *pallipes* be examined, it will be found that each is obtusely rounded and very feebly, arcuately and subtransversely subtruncate at tip; with this premise the two following species may be identified very readily:

Nebria lacustris n. sp.—Coloration and lustre throughout as in *pallipes* but shorter in form and with relatively smaller head and prothorax; head with two smooth impressions anteriorly; antennæ three-fifths as long as the body; prothorax as in *pallipes* but less broadly rounded at the sides anteriorly, the posterior oblique part rather longer and the sides more broadly though not more strongly reflexed; elytra similar though exceeding the prothorax much more decidedly in width and with the punctures of the deeply impressed striæ coarser and more evident; apices of the elytra in both sexes very acutely angulate, the truncature thence to the suture extremely oblique and feebly sinuate. Length 9.7–10.2 mm.; width 3.9–4.3 mm. Wisconsin (Bayfield) and Minnesota.

The difference in form of the elytral apices is radical, but the species is also distinct from *pallipes* in its smaller size, shorter form, relatively smaller anterior parts, stronger strial punctures and more strongly rounded and broadly reflexed sides of the prothorax. LeConte evidently recognized this species as his "race 2" of *pallipes* (Bull. U. S. Surv., p. 477) because of its divergence from *pallipes* in certain general external features.

Nebria expansa n. sp.—Coloration and general characters of form, sculpture and lustre nearly as in *pallipes*, but larger, with more elongate-oblong elytra and much broader and more anteriorly inflated prothorax; head nearly similar but relatively much smaller; prothorax notably large and transverse, almost twice as wide as long, the sides strongly rounded anteriorly, strongly oblique and broadly, just visibly sinuate thence to the very obtuse angles; surface with the sides very broadly concave and strongly reflexed; anterior and basal transverse impressions conspicuously deep; base relatively narrower than in *pallipes;* elytra more elongate, parallel, less rounded at the sides, two-fifths wider than the prothorax, the striæ as in *pallipes*, except that the punctures are less evident and generally subobsolete suturally; apices exactly as in *lacustris*. Length 11.0 mm.; width 4.6–4.7 mm. Texas and Indiana. Two female examples.

Distinguishable at once from *pallipes* by the elytral apices, larger size and much broader prothorax; from *lacustris* by the larger size, feebler elytral punctures and relatively much larger prothorax.

Carabus Linné.

This genus, so remarkably developed in the palæarctic fauna, is comparatively undeveloped in North America and it is long since any allusion to our species has been made in a systematic way. Meanwhile there have been a number of forms in my collection that I have not been able to identify, and as they are probably undescribed, the present occasion is utilized to bring them forward.

Carabus lecontei n. sp.—Stout, convex, strongly shining and feebly sculptured, deep black, the elytral margins strongly and the broad thoracic margins more feebly bluish; head two-fifths as wide as the prothorax, the anterior impressions at the sides of the epistoma deep; antennæ rather long, black, the fifth joint not quite three times as long as wide; prothorax large, transverse, four-fifths as wide as the elytra, nearly one-half wider than long, the sides subparallel, broadly, feebly rounded anteriorly, thence just visibly converging and nearly straight to the rounded basal angles, which are very broadly but feebly produced posteriorly, the median truncate part of the base equal to half the maximum width; surface broadly convex, smooth and wholly punctureless, except in the broadly concave side margins, which become very broad and deep basally, the smooth lateral edges very thick; anterior impression obsolete but with a very few faint punctures, the transverse basal impression conspicuously deep and punctured; median stria fine, entire; elytra not quite one-half longer than wide, oval, slightly broader behind the middle, evenly and strongly convex, rather broadly reflexed at the sides, having close-set unimpressed series of very fine, well spaced punctures, which become coarser and altogether confused on the flanks, also having three series of deep non-metallic foveæ; hind tarsi much longer than the tibiæ; under surface and legs deep black throughout, except the side-pieces of the prosternum, which are violaceous. Length 24.0 mm.; width 10.7 mm. Texas. A single female example.

The type formed a part of the Levette collection and has puzzled me for many years; it is related to *sylvosus* Say, but differs in the much larger and broader prothorax with less rounded and less basally converging sides, distinct median stria and deeper basal transverse impression of the latter and relatively shorter elytra, having the series of punctures wholly unimpressed.

Carabus patulicollis n. sp.—Elongate, subparallel, rather strongly convex, shining, piceous-black, piceo-rufous beneath—probably immature,—the legs and antennæ black; head half as wide as the prothorax, with very prominent eyes, finely punctured and rugulose basally, the vertex longitudinally and closely plicate toward the eyes, the impressions at the sides of the epistoma deep, very smooth and polished; antennæ three-fifths as long as the body; prothorax transverse, nearly one-half wider than long, fully three-fourths as wide as the elytra, with broad flat polished vermicular rugæ throughout and with a few fine scattered punctures sublaterally, becoming gradually coarse, dense, punctured rugæ in the lateral concavity and in about lateral fourth of basal half, where there is a broad feeble longitudinal impression at outer fourth; margins fine, broadly and moderately reflexed basally, more abruptly anteriorly, widest a little before the middle, the sides broadly rounded, distinctly converging and straight in about basal half to the rounded and posteriorly produced angles, the base wider than the apex, the truncate part rather more than half the maximum width; surface without anterior or posterior transverse impressions, the median stria fine but distinct;

elytra three-fourths longer than wide, oval, the side margins concolorous, the surface convex, with sculpture somewhat as in *tædatus*, not regularly striiform however but much confused, granular on the flanks, the foveæ nearly similar. Length 19.5 mm.; width 8.0 mm. A single male from an unrecorded locality but probably taken in Colorado.

Differs from *tædatus*, of which group it is a member, by the very broad prothorax and confused elytral sculpture, in which, however, the *tædatus* type can be traced very readily.

Carabus franciscanus n. sp.—Sculpture, coloration and lustre as in *tædatus*, the body much more elongate and with the elytra deplanate toward the humeri and not convexly declivous; head not quite so large and with radially different sculpture; last joint of the maxillary palpi obtriangular and longer than the preceding joint; surface with the lateral impressions not short and anterior as in *tædatus* but very deep and prolonged posteriorly to the line of the middle of the eyes, gradually expanding and very coarsely, strongly, vermicularly rugose, the rugæ throughout its length extending inwardly nearly to the median line of the vertex and front, which is elevated in a ridge-like manner, with the summit of the ridge deeply canaliculate except anteriorly; neck strongly rugose, smooth medially; antennæ less than half as long as the body, tapering distally; prothorax as in *tædatus* but relatively larger and but very little wider than long, three-fifths as wide as the elytra, the latter much more elongate and less convex, gradually declivous laterally, still more gradually basally, in outline and sculpture nearly as in *tædatus*, the sides straighter basally, the side margins much more broadly reflexed; hind tarsi about as long as the tibiæ. Length 21.5 mm.; width 8.5 mm. California (coast region near San Francisco). A single male.

At first I thought that this species might be regarded as a subspecies of *tædatus*, but on examining the structure of the head and the flanks of the elytra, especially in the vicinity of the humeri, it becomes evident that it has no such close relationship, though a member of the *tædatus* group.

Carabus tædatus ssp. **montanicus** nov.—Similar to *tædatus* in general form, sculpture and coloration but larger, somewhat stouter and with relatively slightly larger head and prothorax; head nearly similar, the vertex broadly almost smooth, with a few longitudinal folds near the eyes; antennæ perceptibly longer and stouter; prothorax similar in outline and sculpture but with distinct punctures scattered medially, similarly dense laterally and basally; elytra similar in sculpture and convexity throughout, but a little broader, nearly three-fifths longer than wide, one-half wider than the prothorax; abdomen rufo-piceous. Length 21.5 mm.; width 9.0 mm. Idaho (Cœur d'Alene). A single male example.

The type of this species was sent to me under the name *oregonensis*

Lec., which it evidently is not, as *oregonensis* is said to be blue-black, with the prothorax almost opaque and densely, intricately rugose, the elytra almost twice as wide as the prothorax and, together with the head, proportionally smaller, narrower and much more finely and densely rugose than in *tædatus;* its length is 21.3 mm.

Of the common *serratus* Say there seems to be a rather well marked subspecies as follows:

Carabus serratus ssp. **vegasensis** nov.—Similar to *serratus* in coloration, general form and sculpture throughout, but with the elytra not feebly convex and very gradually declivous laterally, but strongly convex with the sides rapidly and more steeply declivous; elytral sculpture a little stronger, the punctures of the close-set interstitial series separated by more deeply impressed transverse lines. Length 17.0–17.5 mm.; width 7.2–7.4 mm. New Mexico (Las Vegas and also from an unrecorded locality); also one, unlabeled, from the Levette collection, possibly from southern Colorado.

Of *serratus* I have a good series marked Pennsylvania and Washington State; *vegasensis* seems to be a more southern modification.

In the Crotch table of *Carabus*, *tatumi* Mots., is given as a synonym of *mæander* Fisch.; this is far from being the fact, as the following description of *tatumi*, given by Motschulsky, will show:

" **Carabus tatumi** Mots.—Color et statura *C. serrati* Say, sed elytris imbricato-striatis, cancellis distinctis, elevatis; oblongus, subconvexus, supra nigro-subcyaneus, limbo paulo dilutiore; capite fere glabro; thorace capite duplo latiore, quadrato, antice arcuatim angustato, postice punctato, latioribus marginatis, reflexis; angulis posticis rectis, apice rotundatis, modice prominulis; elytris thorace paulo latioribus, subovatis, antice truncatis, 16-striatis, interstitiis subconvexis, transverso-rugatis, 4, 8 et 12 catenato-interruptis, lævis, ♀ long. 8 l.—lat. elyt. 3 l.—lat. thor. 2⅓ l. De la Hudson-Bay, dans l'Amerique arctique."

It seems to be related closely to *serratus* Say, but of more slender form and stronger sculpture; it is recorded as a distinct species in the Munich catalogue but by Horn (Trans. Am. Ent. Soc., 1870, p. 70) is said to be *serratus;* however, as this author, just above, makes *Calosoma prominens* Lec., the same as *peregrinator* Guér., complete dependence cannot be placed on the reference. *Hudsonicus* Mots., is probably *mæander*. *Gladiator* Mots., is said by Horn (l. c.) to be *baccivorus* Fisch.

Calosoma Weber.

In this genus and the closely related *Callisthenes*, there are still a number of species not represented in my collection, such as *pro-*

tracta,* *prominens*, *eremicola*, *rugosipennis*, *simplex*, *wilkesi*, *dietzi*, *latipennis*, *moniliata*, *subœnea* and the true *luxata*, which seems to be decidedly a *rara avis*. *Prominens* was seemingly represented by a series of four exactly similar examples, taken at various localities, from Albuquerque, New Mexico to southern California, until Mr. Fall discovered that they are not that species at all but another quite distinct, which he named *parvicollis*, and, on turning to the original description of *prominens* under the preoccupied name *angulata* (Ann. Lyc. N. Y., V, p. 199) it becomes apparent that most of us do not have the true *prominens*, which is a very large species 1.3 inch in length, if the "Long. .13" as published is to be so translated. On the other hand, however, I find about a dozen forms that have no names whatever as yet, and it is my purpose to describe these at the present opportunity. It seems tolerably certain that the *angulata* of Chevrolat, does not occur this side of the Mexican boundary; at least the good figure given by Bates in the "Biologia" has a very exotic appearance, and I certainly have never seen an example of it in any American collection. It seems to be peculiarly characteristic of the fauna of extreme southern Mexico, although Mr. Bates makes a subsequent allusion to Chihuahua.

Of the forms previously described by the writer (Ann. N. Y. Acad. Sci., IX, p. 340), the five announced as species still seem to be valid and isolated forms, and of those named as varieties all are valid, at least as subspecies, excepting *expansa*, which proves to be merely a synonym of *calida*. One at least, by the discovery of additional material in central New Mexico, can be shown to have higher value than originally assigned it; this species is

Calosoma microsticta Csy.—Similar to *obsoleta* in sculpture, lustre and coloration, but much larger, with larger head, more transverse prothorax, the sides of which are rather more reflexed basally and relatively much shorter and broader elytra; punctures of the sternal side-pieces and sides of the abdominal base coarser and more conspicuous. Length 20.0–23.5 mm.; width 9.6–11.0 mm. New Mexico.

*Believing that it is best to reduce everything pertaining to nomenclature to rigid law and system, it seems evident that the gender to be given generic names should be made systematic—determined in fact solely by the form of the ending and not depend upon the vagaries and exceptions of language. For this reason it would seem better that all words ending, for example in *a*, should be considered feminine, in accordance with the general Latin rule, irrespective of Greek gender, and I have therefore considered names having such endings as *soma* and *derma* as feminine, for nomenclatorial reasons, and not neuter, as would be necessary from purely philological considerations.

A pair in perfect state of preservation was sent me by Mr. Woodgate from Jemez Springs; the male is relatively broader than any female in a series of nine specimens of *obsoleta*, and, in the female, the still broader elytra are evidently wider behind the middle than at base.

The two following may be considered subspecies of *tepida* for the present, although the probabilities are that they are rather species than subspecies, as I cannot conceive of interbreeding; all comparisons are made from the male:

Calosoma tepida ssp. **cælator** nov.—Coloration and sculpture nearly as in *tepida*, but more shining, the elytral rugosity larger; body slightly smaller and narrower, the head relatively larger and the prothorax smaller, the latter less transverse, three-fourths wider than long, the sides posteriorly more oblique and straighter, the surface more impressed and laterally reflexed at the sides of the base, otherwise similar; elytra less oblong, narrower at base and more inflated behind the middle, three-fourths longer than the basal width, the latter four-fifths of the maximum width, foveæ larger, smoother and more conspicuously cupreous. Length 19.0 mm.; width 8.7 mm. Idaho (Cœur d'Alene). A single male, taken by Lieut. James A. Leyden.

Distinct in its smaller size, narrower and more cuneate outline, more impressed prothorax with more oblique sides posteriorly and brighter elytral foveæ.

Calosoma tepida ssp. **indigens** nov.—Similar to *tepida* in coloration, lustre, very dense sculpture, small and moderately evident foveæ and general form and impressions of the pronotum, but with the body smaller in size and relatively very much narrower; head not so large; prothorax smaller, similarly rounded at the sides and feebly impressed and reflexed laterally at base, a little less than twice as wide as long; elytra narrower, relatively more elongate, otherwise nearly similar, the side margins very narrowly reflexed. Length 15.5–17.0 mm.; width 7.3–7.7 mm. Oregon. From two different localities, both unrecorded.

This form may be distinguished by its small size and very much narrower outline.

Although the description of *Calosoma irregularis*, given by Walker, accords very well with *tepida*, it will be noted that its size seems considerably greater, the length as given by the author being 12 lines or 24 mm. It is also described as æneous-black and there are some other divergencies.

It is stated by Bates that *carbonata* Lec., is synonymous with *peregrinator* Guér. It is true they bear a very decided mutual

resemblance and are scarcely distinguishable superficially, having about the same size, the same sculpture and great similarity of outline, though in *peregrinator* the head and prothorax are relatively a little smaller and the hind tarsi evidently shorter; but, on examining the last ventral segment of the female, which is similarly punctate and pubescent in both, I find that the posterior contour is parabolic, with the apex distinctly blunt though rather narrow in *carbonata*, and triangular, with the apex only very narrowly blunt in *peregrinator*, as shown by a female before me from the Sierra de Durango. I am therefore inclined to consider *carbonata* a subspecies of *peregrinator*.

The following are two other subspecies of this widely distributed type form:

Calosoma peregrinator ssp. **ingens** nov.—A little shorter and broader in the hind body than *carbonata* and somewhat larger in size, with relatively distinctly smaller prothorax, which is however similar in form and sculpture; elytra with similar habitus and sculpture; tarsi nearly similar but scarcely so stout, the claws more elongate and more arcuate. Length 26.5–30.0 mm.; width 11.6–12.4 mm. California (San Diego). A single pair from Mr. Ricksecker.

The fifth ventral of the female is as obtusely rounded as in *carbonata*, but the punctures instead of being gradually dense medially and posteriorly, as in that species, are everywhere sparser and stronger, with only a small area near the centre of the disk in which they become smaller and dense. This is a maritime modification, *carbonata* proper being native to the higher interior regions, especially of New Mexico.

Calosoma peregrinator ssp. **amplipennis** nov.—Similar to *carbonata* in color, lustre and sculpture throughout, except that the elytral foveæ are larger and more evident; body a little smaller, the elytra notably shorter and broader, distinctly less than one-half longer than wide; head and prothorax a little smaller but of similar outline and sculpture. Length 25.0 mm.; width 12.3 mm. Locality unrecorded.

The single type is unfortunately a male, for the female, as shown by Fall, is the sex having the distinctive sexual characters in this group; it is quite readily recognizable, however, by its much shorter elytra and is probably from New Mexico or southern Colorado.

The following belongs to the *peregrinator* group but is I think specifically different:

Calosoma subgracilis n. sp.—Narrow, convex, alutaceous, the elytra highly polished, deep black throughout; head as in *peregrinator* and *carbonata* but smaller, the antennæ much more slender; prothorax as in the latter but smaller and less transverse, scarcely more than three-fourths wider than long; elytra parallel, more elongate, more than two-thirds longer than wide, the punctures throughout extremely small, similar throughout the length, the foveæ minute and scarcely discoverable, the transverse rugulæ obsolete, except a few vestiges very near the humeri; legs slender; hind tarsi very slender, scarcely more than three-fourths as long as the tibiæ. Length 20.5 mm.; width 8.4 mm. Locality unrecorded in the Levette collection.

The single male type represents a close ally of *carbonata*, but the very much more slender form, small size, smaller head and prothorax, more glossy elytra and more slender antennæ and legs would seem to be specific.

Calosoma apacheana n. sp.—Form somewhat as in *carbonata* though smaller and narrower, with relatively larger head and prothorax, the lustre less shining, the sculpture stronger; head nearly similar but with more elongate lateral furrows, evidently more than half as wide as the prothorax; antennæ slender, not quite one-half as long as the body; prothorax very nearly twice as wide as long and three-fourths as wide as the elytra, the outline and sculpture as in *carbonata*, except that each of the postero-lateral impressions in the type is divided completely by an oblique transverse ridge near basal third; elytra oblong, parallel, together obtusely subangulate at apex, having regular unimpressed series of punctures as in *carbonata*, except that the punctures are strong and conspicuous throughout the length, becoming fine only at the apex excepting in the sutural series, where they are strong to the tip; foveæ moderately distinct, the extero-basal rugulæ strong; anterior tarsi (♂) moderately broadly dilated. Length 24.0 mm.; width 9.7 mm. Arizona.

The division of the basal impressions of the pronotum, announced above, is exactly symmetric bilaterally, but it is nevertheless adventitious, in all probability, in the single male type; the species is distinct, however, by reason of the relatively broader anterior parts, stronger elytral punctures and smaller size. The anterior male tarsi are not quite so strongly dilated as in *carbonata*.

Calosoma hospes n. sp.—Small in size, stout, convex, shining, black throughout; head small, finely, not densely punctate and rugulose, three-fifths as wide as the prothorax, the antero-lateral impressions short; antennæ (♂) nearly half as long as the body; prothorax transverse, fully three-fourths wider than long, just visibly more than half as wide as the elytra, rounded at the sides, the latter slightly more convergent and straighter in basal two-fifths, sometimes feebly angulate at that point; surface very shining, finely, sparsely punctate and feebly rugulose,

more densely and strongly punctate and rugulose near the margins, more coarsely but sparsely basally; side margins not concave, feebly declivous to the abruptly elevated marginal bead, the lateral basal impressions broad and distinct; other impressions, except a fine and partial median stria, obsolete; base broadly arcuate, sinuate slightly near the angles; elytra short, a fourth (♂) to a third (♀) longer than wide, parallel, feebly arcuate at the sides; surface faintly alutaceous; punctures and anterior rugulæ as in *peregrinator*, the fine striæ rather more evident and the punctures less minute basally; tarsi very short, rather slender, the posterior but little more than three-fifths as long as the tibiæ, the anterior (♂) moderately dilated. Length 16.0–17.4 mm.; width 7.8–8.2 mm. California (Coronado, near San Diego).

For some years I considered this to be nothing more than a sea-coast modification of *parviceps*, but on closer examination this assumption proves to be untenable; the anterior tarsi of the male are slightly more dilated, the second joint being only about as wide as long in that species, while here it is decidedly wider than long and the hind tarsi are shorter, these being about three-fourths as long as the tibiæ in *parviceps;* again, the prothorax is much more transverse and the head in relation thereto still smaller, and the transverse elytral rugulæ are more lateral. It seems to be allied also to *eremicola* Fall, from San Clemente Island, but is materially smaller, the length of the latter being given as 17–19 mm., and with shorter elytra. The last ventral of the female is broadly subangulate and is not punctured.

The three species *sponsa*, *parviceps* and *hospes* constitute a peculiar group of the genus of the *peregrinator* type but minute in comparison; whether *eremicola* should be associated with them or not is uncertain.

In the *cancellata* group there are several distinct species hitherto uncharacterized; *œnescens* Lec., from northern Oregon, is however purely a synonym; it was compared under the original description with *tepida* and *calida* only, to which of course it is in no way closely allied. The two following belong to the fauna of extreme southern California:

Calosoma esuriens n. sp.—Body narrow, parallel and convex in form, somewhat shining, black, the elytra more polished and with the foveæ and side margins in part feebly metallic green; head large, rather finely, not densely punctate and rugulose; antennæ (♀) very short, picescent distally, distinctly shorter than the thoracic width; prothorax short, and very transverse, fully twice as wide as long and but very little nar-

rower than the widest part of the elytra, the sides rounded, moderately oblique posteriorly, the angles broadly rounded and slightly produced posteriorly; surface closely, not coarsely punctured, becoming densely rugose laterally, the basal impressions large and deep; elytra parallel, two-fifths longer than wide, sculptured as in *cancellata* but less deeply and a little more coarsely, the indications of striæ less evident; tarsi very short, the posterior barely two-thirds as long as the tibiæ. Length (♀) 17.0 mm.; width 7.4 mm. California (near San Diego),—Dunn.

Distinguishable at once from *cancellata*, which is more northern in distribution in California and Oregon, by its smaller size and narrower, more parallel form, much shorter antennæ and still shorter tarsi, by the relatively much broader prothorax, more parallel and more convex elytra and more evenly punctulate propleura.

Calosoma transversa n. sp.—Larger and much stouter but similar throughout in coloration, lustre and sculpture; head large; prothorax still shorter, a little more than twice as wide as long, the oblique sides posteriorly very much less converging, the lateral impressions much shallower; elytra broad, barely a third longer than wide, not parallel but much swollen behind the middle, where they are nearly a fourth wider than at base and two-fifths wider than the prothorax; surface less convex than in *esuriens* and still more feebly sculptured; tarsi longer than in either of those species, the posterior rather more than four-fifths as long as the tibiæ; antennæ rather short, not as long as in *cancellata*, though equal in length to the thoracic width. Length (♀) 20.0 mm.; width 8.8 mm. California (near San Diego),—Ricksecker.

Differs from the preceding in its much broader form, feebler sculpture and less convex, posteriorly inflated elytra, longer tarsi and antennæ and many other features, and, from *cancellata*, in the very much feebler sculpture, broader and more transverse, less posteriorly narrowed and more feebly impressed prothorax, among other differential characters.

Tristoides Fall, is so distinct from *tristis*, in its very much larger and stouter form, more convex, shining surface and fine punctures, that there is really no close relationship between them; in fact it would have been better to give it a more distinctive name. I have two examples, both females, from Arizona and southern California, in which the elytra are relatively shorter than in any of a good series of the typical coast form at hand; they probably represent a subspecies of *tristoides*. In this connection, attention ought to be called to a male and female of *semilævis* Lec., found at Alameda, where the normal form was also taken abundantly, which have the

prothorax narrower, parallel and feebly, evenly arcuate at the sides from apex to base, and not inflated and strongly rounded as in the normal form of the species; as there are but few other points of difference, I am uncertain as to the taxonomic meaning of this peculiarity, though it imparts a distinctly different facies to these two individuals. The genus *Calosoma*, when fully collected, will prove almost as troublesome to us as *Carabus* is to the European systematists.

Callisthenes Fisch.

We need only take a general glance at *Calosoma* and *Callisthenes* as a whole, to note a very perceptible difference in habitus extending consistently through both groups of species, and *Callisthenes* should therefore be retained for those Calosomids having oval elytra and broadly rounded humeri, generally signifying absence or great curtailment of the wings. But disregarding these external features, the genus is proved conclusively to be distinct because of antennal structure. It will be observed that the distal joints in *Calosoma* are virtually uniform in their dense pubescence, while in *Callisthenes* the outer joints are in great part glabrous on their flattened faces, the lines separating these glabrous spaces from the large pubescent areas being very sharply defined. The head is generally less developed than in *Calosoma*, and such forms as *moniliatus* Lec., which possess the three series of elytral elevations as in *Calosoma cancellata*, and the similarity to which in elytral sculpture may perhaps have given rise to doubts concerning the validity of *Callisthenes*, are not really allied to *cancellata* at all; they differ not only in the rounded humeri but in the very much smaller head, form of the basal part of the prothorax, which is exactly as in the *zimmermanni* group of *Callisthenes*, and in the distinctive antennal structure; furthermore, a closer examination will show that the elytral sculpture, between the rows of elevations, is wholly different from that of the *cancellata* group of *Calosoma*.

The species of *Callisthenes* are very numerous in the western parts of North America, but are unknown east of the Rocky Mountains to any considerable distance and they are particularly abundant in California. The following seem to be hitherto unnamed:

Callisthenes concinnus n. sp.—Oval, convex, rather more elongate

than usual, shining, black, the pronotum with feeble greenish glint laterally, the elytra bright æneous-green throughout, excepting the serial elevations, which are black; propleura faintly cupreous, with the small scattered asperate punctures bright green, these also greenish on the other sternal pleura; head small, with fine scattered punctures; antennæ extending to about basal fourth of the elytra; prothorax not quite twice as wide as long, almost twice as wide as the head and fully two-thirds as wide as the elytra, strongly rounded at the sides anteriorly, the sides thence strongly oblique and less rounded to the apices of the basal angles, which are narrowly rounded and much produced posteriorly; surface concave at the sides but only feebly impressed laterally at base, the median stria strong; punctures fine and sparse, densely rugulose laterally, more broadly at base; elytra oval, widest at the middle, not quite one-half longer than wide, the surface between the series of large oblong elevations evenly and asperately but not densely punctate and feebly elevated along the middle, the cancelli of the marginal series small and not black; foveæ separating the elevations large, shallow; legs slender; anterior tarsi (♂) narrowly dilated, the second joint rather longer than wide. Length (♂) 15.0 mm.; width 6.8 mm. Idaho (Priest Lake).

This species was sent to me under the name *moniliatus*, of which the *Carabus bicolor* of Walker is a synonym, but it evidently differs in the brighter metallic green coloration of the elytra, smaller size and much sparser sculpture of the head, prothorax and elytra; *moniliatus* is 16.5 mm. in length and is said to have a good deal the habitus of *Carabus serratus*, which would make its convexity very much less. It seems to resemble *laqueatus* Lec., from Saskatchewan, which is by no means a synonyn of *moniliatus*, but apparently a distinct species, much more closely than it does the latter, but this is described as robust and nigro-æneous; its length is nearly 17 mm.

Callisthenes discors ssp. **inversus** nov.—Coloration, shining lustre and general characters exactly as in *discors*, but less obese and more oblong; head not quite so large but similar; prothorax similar throughout though a little shorter and more transverse, and, in relation to the elytra, very much wider; elytra oblong, with parallel and moderately rounded sides, having unimpressed series of strong deep subelongate punctures, the intervals flat, each with a series of small and well separated punctures. Length (♀) 17.5 mm.; width 8.6 mm. California (San Francisco).

The type is the only one discoverable among a good series of *discors* also taken at San Francisco; in outline it is quite different, the prothorax not barely two-thirds as wide as the elytra as in that species, but fully three-fourths as wide, and the oblong elytra, with much less rounded and less inflated sides, display a singular

reversal in the sculpture. In *discors* it will be observed that the punctures of the striæ are nearly always smaller than those of the intervals, or at any rate are never larger, while here the strial punctures are two or three times as large as those of the intervals, the latter being small and much shallower.

In the *arcuatus—dietzi* section there are many species in southern California; *latipennis* Horn, as remarked by Schaeffer, is not very closely allied, having more the facies of the *luxatus* group and need not be considered in the comparisons. In none of these species are the basal parts of the elytral margins in the least serrulate. In the description of *dietzi* (Journ. N. Y. Ent. Soc., 1904, p. 197), Mr. Schaeffer mentions some points that do not appear in any of those described below; for example, the margins are not bluish, as described of *dietzi*, except in *gravidulus*, and this differs wholly in the unrounded form of the thoracic angles and in its very small size; again, the author states that the elytra are but little wider than the widest part of the prothorax, which is eminently not true of any of those before me, and mentions certain punctures of the elytral intervals which are finer and sparser than those of the striæ; again *gravidulus* is the only one displaying any trace of punctures other than those of the series, excepting of course the very small foveæ; he further states that the sides of the prothorax become nearly straight posteriorly, which is not true of any described below, also that the mandibles are faintly rugose and finally that the length is 15–18 mm. and the width 7–8.5 mm. I think therefore that *dietzi* is not included among the following three species, although from the same part of the country; they all belong to the *discors* group of the genus.

Callisthenes tularensis n. sp.—Suboblong-oval, convex, black throughout, shining though faintly alutaceous, the margins concolorous, not in the least colored; head small, less than half as wide as the prothorax, very minutely and sparsely punctate, feebly rugulose laterally, the anterior impressions deep; labrum transversely and rugosely impressed, slightly emarginate medially; mandibles rather closely, irregularly strigose; antennæ (♀) as long as the thoracic width; prothorax about twice as wide as long, two-thirds as wide as the elytra, parallel, the sides very evenly arcuate from apex to base, the angles broadly rounded and slightly produced; surface convex, steeply declivous antero-laterally almost to the marginal bead and without gutter, this becoming deplanate and slightly expanding posteriorly behind about the middle,

the surface basally with a moderate impression at outer fifth, thence nearly flat to the angles, scarcely at all reflexed; surface with fine anastomosing creases, minutely, sparsely punctate, strongly but not densely punctate laterally; median stria distinct, subentire; elytra oblong-oval, a third longer than wide, slightly widest just behind the middle, from which point to the broad humeral rounding they are nearly straight; surface with unimpressed series of very fine and distant punctules, connected with very fine faint and irregular longitudinal and transverse scratches, the intervals vaguely and faintly subelevated by oblique light but without trace of punctuation, the foveæ of the three series very small; sides moderately reflexed and with coarse punctures and transverse rugulæ. Length (♀) 17.0 mm.; width 8.0 mm. California (Tulare Co.).

This is the form to which I alluded in describing *arcuatus* and thought to be *dietzi* by Mr. Schaeffer, but it is evidently not the same according to the description of that species.

Callisthenes opimus n. sp.—Much stouter and more ventricose, much more shining, deep black, smooth and convex, the margins not colored; head small though fully half as wide as the prothorax, nearly as in the preceding; mandibles closely, anastomosingly strigose; antennæ longer and more slender, longer than the thoracic width; prothorax slightly less than twice as wide as long, parallel and evenly rounded at the sides throughout, three-fifths to two-thirds as wide as the elytra, the angles as in the preceding; surface similarly sculptured but very differently impressed, rapidly declivous laterally, with a concave marginal gutter which is broad posteriorly, where the edge is much reflexed, gradually shallower and narrower anteriorly; basal impressions large and deep, divided transversely by a low feeble ridge in the female, somewhat after the manner so strongly developed in the type of *Calosoma apacheana*, the division not visible in the male; elytra evenly oblong-oval, with slightly less broadly rounded humeri than in *tularensis*, the sculpture nearly similar, except that the serial punctures are not so minute, perforate, the anastomosing scratches and feeble interstitial elevation obsolete, the foveæ very small, cupreous; side margins almost similar; tarsi slender, the posterior two-thirds as long as the tibiæ, a little longer in the male. Length 15.5–17.5 mm.; width 7.5–8.5 mm. California (Kern Co.),—Hopping.

Distinguishable at once from the preceding by its more corpulent form, more shining lustre, more evenly rounded sides of the elytra, more reflexed margins of the prothorax, longer antennæ and numerous other characters; it was received under the name *latipennis* Horn.

Callisthenes gravidulus n. sp.—Small, strongly convex, ventricose, alutaceous, black, the margins very faintly bluish; head rather more than half as wide as the prothorax, sculptured as in the preceding species, the mandibles more feebly strigose and less closely; antennæ much longer

than the thoracic width; prothorax not quite twice as wide as long, the sides almost evenly rounded, though perhaps a little more converging basally than apically, three-fourths as wide as the elytra; surface moderately convex, much less declivous laterally than in the two preceding, finely but strongly, rather closely and distinctly punctate and confusedly creased, becoming densely punctate and rugose laterally, feebly reflexed anteriorly, not at all so medially and flat, though sloping upward just visibly from the impression to the sides, at base, the bead distinct anteriorly, wholly disappearing at the middle and thence to the base forming an increasingly wide, flat and punctureless border; basal angles of unusual form, being but slightly obtuse though rather sharply angular, the inner side of the angle oblique and straight to the truncate median part of the base, the outer side forming a continuation of the lateral arcuation; elytra scarcely more than a fourth longer than wide, with only moderately rounded humeri; surface convex, rather dull, smooth, having very fine but continuous scratchlike striæ, which are slightly wavy but not punctate, the intervals each with a regular series of fine, not close-set punctures and some confused suboblique detached scratches; margins moderately reflexed, having a closer series of coarser graniferous punctures though scarcely at all rugose; legs rather long and slender; anterior tarsi (♂) moderately dilated, the second joint scarcely at all wider than long. Length (♂) 13.2 mm.; width 6.7 mm. California (Sequoia National Park, 4600′, Tulare Co.).

The single type was sent to me by Mr. Hopping under the name *dietzi*; but the small size, conformation of the basal thoracic angles and peculiar elytral sculpture preclude any such association.

The *luxatus* group comprises numerous species, in general very well differentiated among themselves and having great diversity of form and sculpture; *latipennis* of Horn and the true *luxatus* are still wanting in my collection, and, in the following table, are interpolated as accurately as possible from the published descriptions. The erect setæ at the sides of the prothorax, conspicuous in some species, do not seem to have been noted heretofore.

Side margins of the elytra perfectly even.....2
Side margins serrate basally.....10
2—Elytra strongly sculptured.....3
Elytra feebly sculptured, except very near the sides.....8
3—Prothorax not at all reflexed at the sides, the marginal bead equal from apex to base, the basal angles very broadly rounded and only very slightly produced posteriorly. Body small, rather narrow, deep black; head with strong and moderately close punctures, becoming fine and sparse medially on the vertex and front, the lateral rugæ feeble; mandibles with very feeble sparse rugæ; antennæ as long as the head and prothorax, glabrous, the outer joints with a large outer and inner sharply limited area of dense punctulation

and pubescence; prothorax small, three-fourths wider than the head, the sides strongly rounded near the apex, thence nearly straight and unusually oblique to the base; surface only very feebly but almost evenly convex to the lateral bead throughout the length, the impressions almost obsolete, the surface strongly and rather closely punctate, becoming still more strongly and densely punctured and rugose laterally, more broadly basally; sides apparently with a single seta near the middle; elytra oval, scarcely a third longer than wide and two-fifths wider than the prothorax, having contiguous series of large and feebly convex tegulæ, each having posteriorly a small asperate puncture, the tegulæ becoming smaller and more tuberculiform at the sides and toward apex. Length (♂) 15.0 mm.; width 6.8 mm. Oregon ..... **zimmermanni** Lec.

Prothorax always more or less reflexed at the sides, although sometimes scarcely visibly, the basal angles more strongly rounded and distinctly produced posteriorly 4

4—Elytra with equal close-set striæ and transverse grooves, forming subquadrate, almost evenly convex tegulæ, which do not become notably altered in form or tuberculiform near the sides 5

Elytra with the transverse lines separating the tegulæ broader and arcuate, the tegulæ more pointed or asperate at their posterior ends and laterally becoming smaller, more widely separated and strongly tuberculiform 6

5—Form stout, rather less convex, deep black, moderately shining; head larger, two-thirds as wide as the prothorax, having large and very obsolete rugæ and minute, very sparse punctures; mandibles feebly rugulose; antennæ rather short, nearly as in the preceding but much shorter than the head and prothorax, the latter very transverse, fully twice as wide as long, the sides broadly rounded, becoming moderately oblique and nearly straight in about basal half, the angles rather narrowly rounded and much produced; surface rather finely but strongly, closely punctate and rugulose, becoming rather deeply concave at the sides from base to apex and more densely, coarsely punctured and rugose, the impressions rather deep; elytra broadly oblong-oval, barely a fourth longer than wide, extremely narrowly reflexed at the sides, the tegulæ becoming smaller, much confused and graniform apically. Length (♂) 15.0 mm.; width 7.5 mm. Wyoming ..... **striatulus** Lec.

Form much less stout, with much smaller head and prothorax, deep black but more shining; head two-thirds as wide as the prothorax, with fine sparse punctures and very obsolete rugulation, more markedly punctate and rugulose laterally but not on the neck; mandibles arcuate, finely, not strongly strigose; antennæ much longer, extending nearly to basal fourth of the elytra (♂), a little shorter (♀); prothorax small, very much less transverse and more narrowed basally, barely two-thirds wider than long, the sides more strongly and more anteriorly rounded, very oblique and becoming straight to the base, the angles narrowly rounded and sharply produced; surface finely, sparsely punctate medially, the punctures very gradually becoming coarse, close and rugulose laterally and

coarse basally and apically, broadly but not deeply reflexed at the sides, the impressions not distinct, being confined to the basal margin at the angles; elytra narrower, a third to two-fifths longer than wide, oval, convex, two-fifths wider than the prothorax, sculptured nearly as in the preceding but more strongly, the tegulæ more convex and more polished; flanks less declivous toward the acute lateral bead. Length 14.0–14.2 mm.; width 6.4–6.7 mm. California (Placer Co.), —Koebele. Three examples..... **exaratus** n. sp.

6—Tegulæ large, finely separated and nearly flat inwardly, becoming widely separated, small and prominent only on and toward the flanks and on the posterior declivity. Body stout, convex, dull, the elytra somewhat shining, deep black; head rather large, fully two-thirds as wide as the prothorax, finely, rather closely punctate, with a posteriorly arcuate transverse area from eye to eye, in which the punctures become larger and sparser; rugulosity near the eyes obsolete; antennæ rather short; mandibles obsoletely strigose, short, barely at all inwardly arcuate at tip; prothorax transverse, nearly twice as wide as long, the sides broadly rounded, oblique and nearly straight posteriorly, the angles evenly rounded, produced; surface nearly flat throughout, and everywhere rather finely, very closely and strongly punctured, a little more coarsely and rugosely laterally, the impressions obsolete, the side margins scarcely at all reflexed except moderately toward base; elytra oblong-oval, with rather evident though rounded humeri, a third longer than wide, one-half wider than the prothorax. Length (♀) 15.5 mm.; width 7.4 mm. California (locality not recorded in the Levette collection). **tegulatus** n. sp.

A—Similar but a little less stout, with notably smaller head, obsolete humeri, the sides being broadly rounded to the base and with longer and more slender tarsi, the posterior being three-fourths as long as the tibiæ, the second joint nearly two and one-half times as long as wide, instead of two-thirds the tibial length, with the second joint only twice as long as wide as is the case in *tegulatus;* the thoracic punctures are less close-set medially, and, toward the sides, become much coarser than they are in the preceding. Length (♀) 14.5 mm.; width 7.0 mm. California (from the same source as the preceding)..... **viator** n. subsp.

Tegulæ narrower, more convex and more separated internally, becoming small, widely isolated and sharply tuberculiform in fully external half of the elytra; sides of the prothorax with numerous long erect setæ.....7

7—Body obese, rather convex, deep grayish-black, dull in lustre; head moderately large, three-fifths as wide as the prothorax, moderately finely, strongly, closely punctate and feebly rugulose throughout, with a smoother median patch at the apex of the front; rugulation toward the eyes strong and dense; mandibles strongly arcuate from base to apex, the latter curved inward and acute, the strigæ strong and close but rather fine; antennæ nearly as long as the head and prothorax, the latter short and broad, nearly twice as wide as long and three-fourths (♂) as wide as the elytra, to a little less (♀),

the sides rounded, converging, becoming almost straight posteriorly; surface somewhat finely but very deeply and closely punctate, broadly and densely rugose toward the sides, moderately convex, feebly declivous laterally to the sharply elevated marginal bead but not reflexed even basally, though the rather deep narrow impressions give somewhat this appearance, the basal angles rather broadly rounded and only very moderately produced; elytra short, oblong-oval, a fourth to third longer than wide, the humeri rather evident though very broadly rounded. Length 14.5–15.8 mm.; width 7.2–7.7 mm. Northern California. Vancouver Island—Walker..... **pimelioides** Walk.

Body narrower and more oblong in form, similar in coloration and lustre; head a little smaller, finely and sparsely punctate and covered throughout with vermicularly anastomosing incised lines, feebly rugose but not more punctate toward the eyes; mandibles almost similar, except that the strigæ are still finer and feebler; antennæ almost similar; prothorax not so broad, distinctly less than twice as wide as long, otherwise nearly similar, except that the basal angles are much more narrowly rounded and more produced posteriorly, the fine punctures medially much less close-set and the lateral rugosity less dense, the impressions and side margins similar; elytra more narrowly oval, two-fifths longer than wide, the humeri broadly rounded; side margins similarly opaque and still more narrowly reflexed; tarsi similarly moderately long, slender. Length (♂) 14.5 mm.; width 7.0 mm. California (Yreka),—Levette.

pustulosus n. sp.

8—Longitudinal and transverse lines of the elytra apparently about equally distinct. Body brownish-black, the elytra reticulate; head and prothorax minutely punctured; mandibles flattened above, rugose with oblique lines; prothorax minutely punctate, the punctures larger and confluent on the lateral margin, the posterior angles rounded, extending backward a little beyond the basal line; elytra suborbicular, reticulate, the "longitudinal lines not more dilated or profoundly impressed than the transverse ones, which are not continuous, the points of intersection not distinguished by a puncture;" three punctured series obsolete, their traces hardly discernible in a certain light and not differently colored. Length more than 15 mm. Inhabits Arkansas..... **luxatus** Say

Longitudinal lines of the elytra, except near the suture, more faint than the transverse lines.....9

9—Form moderately stout, convex and shining, deep black; head three-fifths as wide as the prothorax, very finely and remotely punctulate, the antero-lateral impressions expanding very shallowly at the sides of the front and with some radiating rugulæ; mandibles rather short, thick, not bent inward much apically and very faintly strigose; seta near the eyes transversely doubled; prothorax rather large, barely three-fifths wider than long, the sides broadly rounded, converging and straighter behind, the angles rather narrowly rounded and well produced; surface minutely and remotely punctate, broadly, feebly reflexed and coarsely, sparsely rugose and punctate laterally,

the basal impressions small, basal and feeble; sides with short erect setæ, of which there is a sparse discal cluster near the hind angles; elytra oblong-oval, with rather distinct though rounded humeri, barely a third longer than wide, two-fifths wider than the prothorax, very narrowly reflexed at the sides, the tegulæ on the flanks becoming acutely asperate, especially so on the entire posterior slope. Length (♀) 16.0 mm.; width 7.8 mm. Nevada (banks of the Truckee River at Reno). Taken by the writer. . . . . **monticola** Csy.

Form more ventricose, with smaller prothorax, rather convex and shining, deep black; head nearly similar but less smooth, having some coarse anastomosing creases in addition to the fine remote punctures throughout; mandibles strongly arcuate, densely and strongly strigose, much produced inwardly and very acute at tip; prothorax shorter, fully three-fourths wider than long, the outline, angles and form of the surface nearly similar but with the sculpture throughout coarser and very coarsely and vermicularly rugose broadly toward base, differing greatly in having numerous very long slender erect setæ along the sides throughout the length, more linear in arrangement basally and not so clustered on the disk; elytra nearly two-fifths longer than wide, evenly oval, without humeri, the tegulæ on the flanks not differing materially from those on the upper part of the disk, except on the posterior slope, where they are close and tuberculiform, shining but not asperate as in the preceding. Length (♀) 16.0 mm.; width 7.9 mm. Nevada (near Reno),—Wickham. **nevadensis** n. sp.

10—Body very convex and strongly ventricose, polished, deep black; head two-thirds as wide as the prothorax, very finely, sparsely punctate and with some deep anastomosing creases, the seta near the eyes single as in the preceding; labrum scarcely impressed or medially emarginate though punctate and setose transversely as usual; mandibles arcuate, densely, strongly and finely strigose, curved inward and acute at tip; antennæ moderate, the pubescent lateral areas meeting apically on the flattened sides of the distal joints; prothorax two-thirds wider than long, the sides broadly rounded, converging and becoming straight basally, the angles narrowly rounded, distinctly produced; surface evenly, rather strongly convex from side to side, narrowly but strongly reflexed at the sides, still more strongly basally, finely, sparsely punctate and with small but deep anastomosing creases, more coarsely but sparsely punctured apically and basally, and, laterally, more densely as well as coarsely, the basal impressions very feeble, apparently having but a single marginal seta near the middle; elytra oval, very convex, without distinct humeri, not a third longer than wide, very peculiarly sculptured, as though the transverse lines of the typical form of sculpture were abbreviated, the tegulæ very short, isolated, not definite though becoming broadly prominent at their hind margins, with all longitudinal impressed lines obsolete; the short, transversely asperate lines become much confused and sharply elevated posteriorly and on the flanks; side margins more broadly deplanate than in the preceding forms, the edge strongly serrulate

basally. Length (♀) 14.5 mm.; width 7.6 mm. New Mexico (Coolidge),—Wickham.....**diffractus** n. sp.

Body stout, black and shining; head rather small, sparsely punctured; prothorax broad, moderately convex, smooth, the median stria distinct, the sides coarsely punctured and wrinkled, rather broadly reflexed, the angles rather broadly rounded; elytra broadly oval, smooth and shining, having approximate striæ of very fine punctures; margins rather broad throughout, except at base, where they become narrower, rather densely, muricately punctured and usually of a greenish-bronze color; under surface almost entirely smooth and impunctured, the edge with three or four distinct serrations basally; male as broad as the female of *discors*. Length 14–17 mm. Southern Sierras of California.....**latipennis** Horn

Latipennis seems to combine some general structural features of the *luxatus* and *discors* groups of the genus, the elytral sculpture being as in the *arcuatus* section of the *discors* group, but it differs from both in the serrate elytral side margins toward base, this being another special character, besides cancellated elytral sculpture, well known in *Calosoma* and reappearing in *Callisthenes*. The elytral sculpture of *diffractus* is remarkably different from any other known at present in the genus, because of the absence of longitudinal striæ and great prominence of the short transverse lines; the anterior serratures of the side margins are strong in this species.

Pasimachus Bon.

It is very long since this purely North American genus has been given any attention, even in the way of isolated descriptions and meanwhile the discoveries made by various collectors, chiefly in the Gulf regions and Sonoran provinces, have become rather numerous, so that a revision of all the known forms in a systematic way has become desirable from many points of view. I have endeavored to do this, so far as possible with the material in my collection, in the following tabular statement. Some of the characters used by LeConte in a very superficial sketch (Bull. Buf. Soc. Nat. Hist., 1874, p. 266) forming the last word on our species, do not seem to be of much decisive value, such for instance as the form of the spine of the middle tibiæ and the degree of basal thoracic constriction, and I have therefore merely made occasional use of the latter only. I am unable to identify *substriatus*, of Haldeman, described in very few words (Proc. Ac. Nat. Sci., Phila., I, p. 313) as black,

somewhat shining, the head with rather indistinct longitudinal impressions, the pronotum smooth, with the mesial line slightly impressed, a subtriangular impression near the external angle and another transverse medial one near the base, the elytra scarcely striate; 31 mm. long and from Long Island. There is scarcely a single character given that can help us in coming to a conclusion as to its relationships, but it is compared by its author with *subsulcatus* Say, the largest example of which, or of any of the related forms, before me measures only 22 mm. in length. It is given as a variety of *sublævis* by LeConte, but the largest example of this or related forms at hand is only about 26 mm. in length, and, while it may occur in Long Island, I have never seen an example from so high a latitude; it would be useless therefore to make further allusion to *substriatus* Hald. Omitting this I would propose the following arrangement of our numerous species and subspecies:

Hind body short, generally but very little longer than wide.....2
Hind body always evidently longer than wide.....8
2—Elytra conjointly broadly and obtusely rounded behind; humeral carina very short; hind tibiæ with sparse hairs within in both sexes; form stout, parallel and very convex.....3
Elytra obliquely and obtusely pointed behind.....5
3—Hind tarsi short, much shorter than the tibiæ. Body oblong, convex, rather shining, deep black, the margins very faintly and scarcely visibly violaceous; head about two-thirds as wide as the prothorax, the two impressions distinct, the labrum narrowly trilobed, the middle lobe a little more advanced, rounded and smooth, the lateral obtusely dentiform, the lateral discal impressions deep, the two median diffuse; prothorax two-fifths wider than long, but little narrowed at base, the sides broadly rounding to the very obtuse but rather sharp basal angles, just before which there is a very small and feeble sinus, the marginal groove extending fully to and slightly inward from the basal angles; median stria rather strong, the subbasal impressions moderate; scutellum wholly on the peduncle of the hind body, as usual in the genus; elytra just visibly longer than wide, having geminate series of distinct though shallow punctures, separated by lines of barely traceable convexity. Length 23.0–24.5 mm.; width 9.3–9.9 mm. Mississippi (Pass Christian). Two examples taken by the writer.....**brevitarsis** n. sp.
Hind tarsi longer, as long as the tibiæ or very nearly.....4
4—Form a little less abbreviated than the preceding, deep black, with violet side margins, shining, the elytra more or less strongly alutaceous or subopaculate; head similar, except that the apical part of the mandibles, which are similarly moderately strigose, is more slender and prolonged and the median lobe of the labrum more truncate; prothorax nearly similar but a little less transverse and even less

narrowed at base, differing decidedly in having the lateral groove broader and evanescent basally and the very obtuse basal angles much less sharp, in fact narrowly rounded; elytra with the longitudinal lines separating the geminate series much more convex and rather conspicuous, the two lateral ridges stronger than the others; they are together about a fifth longer than wide; tarsi as long as the tibiæ. Length 22.0–25.5 mm.; width 8.7–9.9 mm. Florida (Lake Worth and Key West). Five examples exhibiting no decided variability. [*rugosus* Lec.—an individual aberration having the basal impressions of the prothorax rugose]..... **sublævis** Beauv.

A—Similar but with the elytra, as well as pronotum, highly polished, the former with more rounded sides and rather less convex surface and with the longitudinal convex lines very feeble, the two lateral ridges also feeble but more evident than the others, the punctures wholly obsolete; head, labrum and prothorax throughout nearly as in *brevitarsis*, except that the mandibles are strongly strigose throughout their extent and not on the inner part only as is the case in the two preceding forms; hind tarsi as long as the tibiæ. Length 24.0 mm.; width 9.2 mm. Two similar examples, marked "R. B."..... **assimilis** Lec.

Form more subcylindric, deep black, with narrow violaceous margins, smooth and strongly shining throughout, rather more convex than any of the preceding; mandibles, labrum and prothorax nearly as in *brevitarsis*, the lateral lobes of the labrum still more pointed and dentiform, the median lobe similarly advanced and strongly rounded, the four setigerous foveæ distinct but small; mandibles with slender apices as in *sublævis* and similarly only partially strigose; elytra slightly longer than wide, having irregularly and broadly subgeminate series of very small or minute, sometimes completely obsolete, punctures, but without even evident traces of longitudinal lines of greater convexity, the two lateral ridges being sometimes just visible though also generally wholly obsolete; hind tarsi evidently shorter than the tibiæ but not approaching the brevity seen in *brevitarsis*. Length 22.5–26.5 mm.; width 9.0–10.5 mm. North Carolina (Southern Pines),—Manee. Four homogeneous examples. **oblongus** n. sp.

5—Body very large and convex, the humeral carinæ very short. Form extremely stout, deep black and highly polished throughout, the lateral margins without trace of color; head very large, more than three-fourths as wide as the prothorax, the labrum short, transverse, very coarsely and deeply, longitudinally plicate throughout, the median part of the apex extremely broadly, feebly and evenly arcuate between the slightly more advanced and narrow, rounded lateral lobes, the two lateral punctures very small, the two medial minute at very near the apical margin; mandibles coarsely plicato-strigose but medially only; prothorax very transverse, not quite twice as wide as long, the sides rounded, becoming strongly convergent behind the middle and parallel for a short distance before the basal angles, which are right and sharp, the marginal groove continuing to the base and narrowly along the latter to outer fourth, the stria distinct, the

subbasal impressions large, shallow, prolonged obliquely nearly to the basal angles; elytra but just visibly longer than wide, the sides rounded, less so basally, the surface with widely separated geminate series of very small and feeble punctures, the wider separating lines broadly and very feebly convex, becoming gradually narrower and stronger laterally; hind tarsi about as long as the tibiæ. Length 34.0 mm.; width 14.0 mm. Florida—Levette collection.

strenuus Lec.

A—Similar but smaller, similar in form and in the shining lustre, the lateral margins faintly violaceous; head not quite so large proportionally, the mandibles similar, but the labrum differs decidedly, the middle lobe not plicato-strigose but smooth, much narrower, with its apex evenly and more strongly rounded and separated from the equally advanced lateral lobes by deep and narrow sinuosities, the small median punctures not so near the apex; prothorax nearly similar, except that the parallel part of the sides before the basal angles is very much shorter and differing very markedly in having the basal groove continuous throughout the entire width; elytra nearly similar in form but with the punctures of the geminate series much stronger and very distinct, the double series separated by rather strongly elevated ridges, which are as usual gradually feebler toward the suture; hind tarsi nearly similar though a little more slender. Length 29.5 mm.; width 12.4 mm. Florida. A single example from an unrecorded source.

robustus n. subsp.

Body less convex and very much smaller in size, the humeral carina long, evenly continuous with the inner lateral ridge.....6

6—Entire surface of the elytra deeply, coarsely, closely and almost evenly sulcate, the furrows equal in width to the ridges, slightly alutaceous and each with two series of fine and feeble punctures. Body subdepressed, elongate-oval, black with strong violaceous lustre throughout above, deep black beneath, the anterior parts having a faint violet-blue lustre; head very moderate, not three-fifths as wide as the prothorax, the two impressions distinct but narrow; mandibles smooth, with a few striations near the tooth; labrum nearly smooth, with two large excavations separating the three small lobes, the median lobe slightly the more advanced, smooth and arcuato-truncate; prothorax nearly one-half wider than long, about as wide at base as at apex, the sides broadly rounded, very feebly sinuate toward the right basal angles, the unusually narrow marginal groove interrupted before the base, the groove along the basal margin entire but not quite attaining the basal angles; surface with strong median stria and four subbasal impressions, the inner elongate, the outer near the angles and small; elytra about a fourth longer than wide, the ridges subequal throughout the width, their black color and shining lustre contrasting with the pure violet and duller interspaces, the two lateral ridges not distinctly differentiated from the others, the third and fifth of which gradually become obsolete behind; posterior tarsi slender, about as long as the tibiæ. Length

20.0–22.0 mm.; width 8.4–8.8 mm. Florida (Palm Beach),—Kinzel. Six mutually similar individuals.....**floridanus** n. sp.

Entire surface nearly smooth or with feeble obtuse ridges, the two outer ridges always much stronger than any of the others; color deep black above and beneath.....7

7—Elytra shining, very short, but just visibly longer than wide and only a little more than half as long as the body. Form rather broadly suboval, subdepressed, the lateral margins violaceous; head, mandibles and labrum nearly as in the preceding, except that the two excavations separating the lobes of the labrum are smaller; prothorax slightly shorter and more transverse, otherwise nearly similar, except that the marginal bead is more thickened basally, the angles more obtuse and blunt and the basal groove nearly interrupted submedially; elytra with broad and feebly convex, more or less faint costæ, separated by lines which are fine suturally but broader externally, with faint indications of double series of fine punctures, the two external ridges more abrupt and stronger; tarsi a little thicker than in *floridanus*, not quite as long as the tibiæ. Length 21.0 mm.; width 8.3–8.9 mm. Florida (locality not indicated and also in Marion Co.) .....**subsulcatus** Say

A—Similar to *subsulcatus* but still smoother and more polished, rather more narrowly suboval; margins black; head throughout nearly similar; prothorax less rounded at the sides and not at all sinuate before the subsimilar basal angles, nearly three-fourths wider than long, the marginal groove far from attaining the base, the surface broadly flattened toward the angles, the impressions moderate; basal groove entire but coming far from attaining the angles; lateral bead thick, much thickened posteriorly to the flattening near the angles; elytra similar in form, the ridges barely traceable, the external costæ evident but not strong except the inner basally; tarsi fully as long as the tibiæ. Length 19.5 mm.; width 8.5 mm. Florida (a single example from an unrecorded locality).

subnitens n. subsp.

Elytra opaque, a little longer, nearly a fourth longer than wide, much more than half as long as the body; margins, impressions of the head and prothorax and base of the latter faintly violaceous. Head nearly as in the preceding species, except that the median lobe of the labrum is relatively a little wider and the two median of the setigerous foveæ are rather behind than before the middle of the length; prothorax differing somewhat in form, less transverse and more rounded at the sides, the latter basally becoming much more sinuate, parallel and straight for a considerable distance before the angles, which are a little more than right but sharp, scarcely one-half wider than long; marginal bead much thickened basally, the groove almost attaining the base, the basal groove much interrupted, very fine medially; elytra almost perfectly smooth, the lines of very fine, well separated punctures widely separated, barely traceable and apparently single, the two outer ridges very evident but obtuse, the inner becoming gradually acutely elevated basally as usual; hind tarsi about as long

as the tibiæ. Length 20.0 mm.; width 8.2 mm. Florida (a single example from an unrecorded locality)..... **opacipennis** n. sp.

8—Humeral carina long; elytra at base gradually more broadly sloping outwardly at each side to the long carina, the punctures, when present, in geminate series 9

Humeral carina short; elytra at base sloping convexly and evenly or subevenly throughout the width to the basal margin; punctures, when evident, arranged in single widely separated series or in geminate series 19

9—Elytra with alternating strong and feeble ridges throughout the width; sides of the prothorax broadly rounded to just before the basal angles, where there is a very short sinuation..... 10

Elytra having the surface even and without lateral ridges; sides of the prothorax varying in basal sinuosity; upper surface often rather strongly depressed (♂), a little more convex (♀)..... 11

Elytra smooth to moderately costulate but always having two conspicuous lateral ridges; sides of the prothorax abruptly sinuate before the sharp basal angles though only for a very short distance.... 18

10—Body elongate-oval, rather depressed in both sexes, a little stouter and with more shining and more convex head and pronotum in the female, these being subopaque in the male, the elytra opaque in both sexes, with the ridges shining; head large, with deep and lineiform impressions, the mandibles partially strigose, rather more so in the female; labrum short, subtruncate, sparsely and longitudinally strigose, the strigæ often effaced medially, where the median lobe is very much broader than in the preceding groups and truncate or feebly bilobed; prothorax rather more than one-half wider than long, the base but little (♂), or not at all (♀), narrower than the apex, the sides broadly rounded; basal angles right, rounded (♀) or sharp (♂); lateral bead narrow, only slightly thickened posteriorly and continuing to the base; lateral groove feebly violaceous, rather wide, still broader posteriorly but abruptly terminating some distance before the base, the four subbasal impressions distinct; stria strong, the basal groove irregular; surface depressed and opaque (♂), convex and polished (♀), elytra two-fifths longer than wide, nearly similar in the sexes, the intermediate ridges fine and faint, sometimes wholly obsolete, always abbreviated, the two lateral ridges sharper; lateral margin rather broadly concave, black or faintly violaceous; posterior tarsi (♂) long, much longer than the tibiæ, or (♀) much shorter and only four-fifths as long as the tibiæ. Length (♂ ♀) 27.0–30.0 mm.; width 10.0–11.0 mm. Florida. Five examples.
marginatus Fabr.

Body shorter and much stouter, with still greater sexual disparity, moderately convex (♂), much stouter and strongly convex (♀), opaque throughout in both sexes, the elytral ridges much feebler, the alternate ones less unequal and all, except the two marginal, alutaceous and not shining as they are in the preceding; head relatively not quite so large, less than three-fourths as wide as the prothorax, the impressions not so deep, the labrum and mandibles nearly similar, except that the middle lobe of the former is more

advanced and more rounded though similarly wide; prothorax nearly as in the preceding but more transverse and more convex and opaque in both sexes, much less depressed in the male; elytra much shorter and broader, more rounded at the sides, broader and more convex in the female, the lateral margins still more broadly concave and obscurely violaceous; hind tarsi (♂) very long, much longer than the tibiæ, which are without brush of hair, or (♀) shorter and thicker, not quite as long as the tibiæ. Length (♂) 28.0–29.0, (♀) 28.0–30.5 mm.; width (♂) 11.0–11.4, (♀) 11.7–12.5 mm. North Carolina (Southern Pines),—Manee.....**crassus** n. sp.

11—Body broad and stout in outline.....12

Body much narrower and more elongate.....15

12—Sides of the prothorax moderately converging and feebly sinuate toward base, the angles acute and subabruptly slightly prominent (♂), or more obtuse and distinctly blunt (♀). Body broad, very moderately convex (♂), or much more distinctly so (♀), rather shining, deep black, smooth, with moderately wide blue lateral margins; head with distinct impressions, the labrum trilobed, the median lobe rather short and broad; mandibles smooth (♂) or partially strigose (♀); prothorax transverse, two-thirds wider than long, evidently narrower at base than at apex, the sides rather strongly rounded, moderately converging basally, the median pair of subbasal impressions distinct, the outer nearly obsolete, the stria fine, the marginal bead attaining the base; elytra two-fifths longer than wide, rounded broadly at the sides, gradually obliquely narrowed behind to the rather acute apex, the surface perfectly smooth, without trace of punctures, rather abruptly declivous at the sides to the moderately wide margins; posterior tarsi (♂) very long and slender, much longer than the tibiæ which are without internal brush of hairs, or (♀) shorter though slender and about as long as the tibiæ. Length 25.0–28.0 mm.; width 10.8–11.2 mm. Atlantic regions. [*complanatus* Gmel., *lævis* Lec.] Rather common...**depressus** Fabr.

A—Similar to *depressus* but a little narrower, having a similar blue lateral margin, the median lobe of the labrum more abruptly smooth at apex and more evidently bilobate, the mandibles smooth in both sexes or never with more than a few feeble striations near the tooth and then only visible in the female; prothorax evidently less transverse, the basal angles sharp and slightly everted in both sexes; posterior tarsi (♂) stouter, evidently longer than the tibiæ, or (♀) much shorter and more slender, very much shorter than the tibiæ. Length 27.5 mm.; width 10.8–11.0 mm. North Carolina (locality unrecorded). [*P. limb.* Zimm.—Bull. Buf. Soc. Nat. Hist., 1874, p. 271].....**limbatus** Zimm.

B—Similar to *depressus* but a little larger and notably stouter; head similarly rather large, the median lobe of the labrum short and rather broad, the mandibles feebly and partially striate in both sexes; prothorax similar but more transverse, about three-fourths wider than long, the basal angles right and rather sharp in both sexes; elytra similar but a little more convex and not complet

impunctate as in the two preceding, but with broadly subgeminate series of very fine punctures, generally distinct but sometimes becoming obsolete; tarsi not quite so elongate, with the same sexual differences; lateral margins rather broadly bright violet, not at all blue. Length 25.5–29.5 mm.; width 10.0–12.2 mm. North Carolina (Southern Pines),—Manee . . **carolinensis** n. subsp.

Sides of the prothorax and general features nearly as in *depressus* but a little smaller, not quite so stout, somewhat more convex and more polished black, the head nearly similar, the mandibles as in *depressus*, the labrum nearly similar; prothorax much shorter, four-fifths wider than long, the subbasal impressions shorter and deeper, the more lateral wholly wanting, with the surface even and convex; elytra distinctly narrower and more convex, impunctate though with feeble vestiges of costæ, which become wholly obsolete laterally; hind tarsi in the type slender, fully as long as the tibiæ or a little longer; lateral margins more deeply concave, violet in color. Length 26.5 mm.; width 10.4 mm. Pennsylvania (Carlisle Junction),—A. B. Champlain. A single example, probably male. . . **champlaini** n. sp.

Sides of the prothorax more converging posteriorly, becoming strongly sinuous, so that the sides are parallel for a considerable distance from the angles. 13

13—Elytra without trace of serial punctures, the lateral margins black. Surface shining, the form narrower than in *depressus* or its related forms; mandibles perfectly smooth, the labrum transversely truncate throughout the width, with scarcely a trace of lobation; lineiform depressions of the head rather broadly impressed; prothorax one-half wider than long, the lateral groove deeply attaining the basal angles, the basal groove strong, equal and entire, attaining the angles; stria fine, the middle pair of subbasal impressions alone visible and rather feeble; elytra oval, with rounded sides, two-fifths longer than wide; hind tarsi in example at hand slender, about as long as the tibiæ. Length 26.0 mm.; width 10.0 mm. North Carolina (Asheville). A single specimen apparently but not certainly male, taken by the writer. . . . . **morio** Lec.

Elytra with geminate series of punctures, the side margins colored. . . . 14

14—Body large, shining and much depressed, more so than in *depressus*, rather less depressed in the female as usual, the hind tibiæ (♂) with a large internal brush of dense hairs at apex, deep black, with broad and strongly violet concave side margins; head much larger than in *depressus* or allies, the two impressions deep, the mandibles (♂) partially strigose, with unusually long slender part beyond the tooth, or (♀) smaller, with shorter apical part and strigose almost throughout; labrum with very broad and feeble median lobe; prothorax one-half wider than long, the lateral groove lost at base in a large depression extending from the subbasal median impressions toward the basal angles, the stria fine; basal groove nearly entire, lost at the angles; elytra formed nearly as in *depressus* but still broader and more rounded at the sides, the punctures of the series extremely fine and rather widely spaced but apparently always visible; hind tarsi (♂) rather slender, almost as long as the tibiæ, or (♀) a little stouter and

distinctly shorter. Length 29.0–32.0 mm.; width 11.5–12.4 mm. Indiana. Three examples from the Levette collection.

punctulatus Hald.

Body much less inflated and relatively less depressed, shining, deep black, the side margins rather narrower, violaceous; head relatively smaller, the mandibles smooth in the type, the terminal part of the left slender, moderate in length, of the right broader and more gradually acuminate; median lobe of the labrum broad, evenly rounded, the lateral lobes obsolete and with the edge transverse; impressions of the vertex strong; prothorax not quite one-half wider than long, much narrower at base than at apex and relatively narrower at base than in the preceding, the sides parallel for a long distance from the distinct and right basal angles; grooves and impressions nearly as in *morio;* elytra narrower and less rounded at the sides than in the preceding, the series geminate only internally, equally but similarly closely spaced externally, the punctures well spaced in the series and rather large and strongly impressed, conspicuous, the humeral carina feebly prolonged in a slightly more evident line at the upper limit of the flanks but without trace of a more lateral ridge; series of granuliferous setigerous punctures of the concave side margins unusually strong and close-set; hind tarsi in the type only moderately slender and about as long as the tibiæ, the latter without brush of hair internally. Length 28.0 mm.; width 10.7 mm. Missouri (St. Louis). A single example of undetermined sex, though probably male, was taken by the writer in the suburbs..... **sinuatus** n. sp.

15—Sides of the prothorax very moderately converging posteriorly, and, toward the angles, becoming only very broadly and feebly sinuate, the angles however sharply marked.....16

Sides of the prothorax strongly converging posteriorly, with a long strong basal sinus, the sides becoming straight and parallel for a considerable distance before the angles, which are right and sharply marked..17

16—Form elongate, suboval, moderately convex, nearly similar in the sexes, except that the female has the elytra slightly more elongate and more parallel toward base, deep black, shining, the margins bluish-violaceous and rather wide; head large, three-fourths as wide as the prothorax, the mandibles well developed, finely strigose, partially (♂) or almost wholly (♀), the former having the slender apical part a little more prolonged; labrum with a rather broad, rounded or feebly bilobate median lobe; linear impressions deep; prothorax barely one-half wider than long, the base much narrower than the apex; marginal and basal grooves not quite attaining the angles, the basal strong and even; single pair of subbasal impressions distinct; elytra oval, with rounded sides (♂), oblong-oval (♀), smooth, only rarely exhibiting geminate series of very small and feeble punctures; tarsi (♂) long, distinctly longer than the tibiæ, which are densely pubescent within apically, or (♀) a little more slender, much shorter and subequal in length to the tibiæ, which have fewer bristling hairs within apically. Length 26.0–28.5 mm.;

width 9.5–10.0 mm. Iowa (Keokuk), Missouri (St. Louis), Kansas and Oklahoma. Abundant.....**elongatus** Lec.

Form more abbreviated and more convex, smaller in size, similarly deep black and strongly shining, the margins narrower, and, on the elytra, less concave and black tinted with very faint violaceous; head and mandibles relatively smaller; median lobe of the labrum broad but much less rounded, the flanking sinuses much less evident; mandibles finely and only partially strigose; prothorax much shorter, two-thirds wider than long, convex, the grooves similar, the two subbasal impressions deeper and more lineiform; elytra oblong-oval, shorter, two-fifths longer than wide, rather strongly convex, very smooth though with traces of series of minute and widely spaced punctures posteriorly; hind tarsi (♀) evidently shorter than the tibiæ. Length 24.5 mm.; width 9.3 mm. Arizona. A single female example from the Levette collection.....**pimalis** n. sp.

17—Body smaller and still narrower than in *elongatus*, rather shining, black, with wide and bright violaceous side margins; head relatively large, nearly four-fifths as wide as the prothorax, the mandibles moderate, having a few medial strigæ, the middle lobe of the labrum broad, broadly subtruncate, not advanced beyond the sides, the sinuses moderate; impressions strong as usual; prothorax not quite one-half wider than long, the base evidently though not greatly narrower than the apex, the marginal and basal grooves coarse, entire and attaining the angles, the stria and two subbasal impressions rather deep; elytra oblong-oval, rather more than two-fifths longer than wide, the sides moderately rounded; surface perfectly even but with geminate series of fine and widely spaced but evident punctures, in large part obsolete before the middle; long humeral carina strongly flexed outward at base as usual in this section; hind tarsi (♂) moderately slender, much longer than the tibiæ, which have a short brush of very coarse hairs within apically. Length 23.5 mm.; width 9.0 mm. Nebraska. A single male.....**angustulus** n. sp.

A—Nearly similar but a little less slender and with relatively still larger head, which is otherwise nearly similar throughout; violet margins similarly broad and conspicuous; prothorax nearly similar throughout though a trifle less transverse; elytra similar but a little broader and slightly more convex, smooth, without evident trace of punctuation but having fine and extremely obsolete longitudinal elevated lines, the one forming the prolongation of the long humeral carina very evident though feeble to the apical declivity; hind tarsi (♂) much longer than the tibiæ, the latter with a long brush of close stiff hairs within apically, nearly as in *elongatus*. Length 25.0 mm.; width 9.4 mm. A single male, without indication of locality, from the Levette collection, probably collected in Colorado.....**evanescens** n. subsp.

Body still narrower and with much more oval, laterally rounded elytra, very moderately convex, the surface of deeper and more glossy black; elytral side margins narrower and black; head well developed though barely three-fourths as wide as the prothorax, the impressions and mandibles as in the preceding but with the labrum decidedly

different, the median lobe not so broad, tumid, more abruptly formed and slightly more advanced, arcuato-truncate; prothorax smaller, fully one-half wider than long, the grooves entire, the marginal broad, the two impressions feebler than usual; elytra oval, with arcuate sides to the base, nearly one-half longer than wide, the surface smooth, with barely a trace of minute punctulation at any part though with irregular polygons of very fine lines, as in many other forms; hind tarsi (♂) evidently longer than the tibiæ, which have a moderate brush of stiff testaceous hairs internally at apex. Length 23.5 mm.; width 9.0 mm. New Mexico (Las Vegas),—Meeske. A single male example.....**vegasensis** n. sp.

Body similarly decidedly narrow though still more depressed, and with the upper surface so highly polished as to appear varnished, deep black, the side margins rather narrow and with an extremely faint bluish-violaceous bloom; head and mandibles as in the preceding, the labrum different, the median lobe very broad, nearly half as wide as the labrum, not tumid, very evenly and feebly arcuate at its broad apex, not more advanced than the sides, from which it is separated by distinct though rather narrow sinuses; prothorax as in *vegasensis*, much narrower at base than at apex, scarcely one-half wider than long, the grooves nearly similar, the impressions a little larger and stronger; elytra elongate-oval, with evenly arcuate sides to the base, the surface very smooth, with barely a trace of geminate series apically; hind tarsi (♂) barely at all longer than the tibiæ, which have the usual internal brush of hairs characterizing the males of the *elongatus* group. Length 26.0 mm.; width 9.0 mm. Kansas. A single male. .....**vernicatus** n. sp.

18—Form moderately stout, oblong-oval, strongly convex, shining, black, the side margins black and unusually narrow; head moderately large, the impressions deep, the mandibles (♂) sparsely strigose but only from the tooth to the base; labrum with the median lobe strongly tumid, smooth, only moderately broad, rounded; prothorax not quite one-half wider than long, very much narrower at base than at apex, the lateral and basal grooves uniting at the angles, the sides evenly arcuate; subbasal impressions widely separated, moderate; elytra oblong-oval, rather blunt at apex, two-fifths longer than wide, the sides parallel and feebly arcuate, rounding basally and apically, equal in width to the prothorax as usual, convex, the surface with geminate series of feeble punctures, obsolescent suturally, stronger laterally, the double series separated by lines scarcely visibly elevated inwardly but distinct laterally, the two at the summit of the flanks abruptly strong and conspicuous, confluent at the end of the long humeral carina; hind tarsi (♂) about as long as the tibiæ. Length 25.0 mm.; width 9.0 mm. Kansas (Dodge City),—Knaus.....**duplicatus** Lec.

Form much stouter, larger in size, rather more alutaceous, deep black, the margins similarly narrow and black; head relatively smaller, two-thirds as wide as the prothorax, the mandibles and labrum nearly similar; prothorax larger and more transverse, convex, three-fifths wider than long, the impressions and grooves nearly similar; elytra

broader but of similar oblong-oval parallel obtuse form and convex surface, perfectly smooth throughout and with scarcely a trace of sculpture, except the two lateral ridges, which are often as pronounced and conspicuous as in *duplicatus*, the inner sometimes less elevated; hind tarsi (♂) notably thick, rather longer than the tibiæ, which have numerous stiff pallid hairs internally and especially toward tip, or (♀) much more slender though but little shorter and barely as long as the tibiæ. Length 26.0–27.5 mm.; width 10.2–10.3 mm. Texas.....**costifer** Lec.

19—Body very stout, convex, large in size, deep black, rather shining, very seldom with evident colored margins; hind tibiæ (♂) with a more or less dense brush of hairs internally at apex.....20

Body much narrower, smaller in size, the hind tibiæ (♂) never much more conspicuously pubescent within.....23

20—General outline somewhat as in *depressus*, the elytra normally elongate, the antennæ rather long as usual.....21

General outline much more abbreviated, the elytra unusually short for this section of the genus, between a third and fourth longer than wide; antennæ short, the outer joints but little longer than wide..22

21—Elytra oblong-oval, the sides less rounded; head very large, the labrum trilobed, the median lobe slightly the widest; mandibles (♂) only partially strigose, the apical part slender, moderately prolonged; impressions deep and long; prothorax fully one-half wider than long, widest near apical third, the rounded sides moderately converging posteriorly, becoming broadly sinuate basally and straight for a moderate distance before the right and sharp angles; base evidently but not greatly narrower than the apex, the marginal groove rather narrow, not attaining the base, the basal groove strong, subentire, the impressions rather strong, partially uniting with a smaller impression near the basal angles; elytra two-fifths longer than wide, the margin rather narrower than in *impressus*, black; surface even and with geminate series of rather strong, very distinct, impressed punctures; hind tarsi (♂) rather stout, distinctly shorter than the tibiæ, which have the coarse hairs of the internal apical brush dense and fulvous. Length 32.5 mm.; width 13.0 mm. Texas.
californicus Chaud.

A—Similar but rather more shining, the strigation of the mandibles finer and less close; margins black; prothorax a little more transverse, three-fifths wider than long, otherwise similar, except that the subbasal impressions are very feeble; elytra similar in form but wholly impunctate; hind tarsi (♂) longer, fully as long as the tibiæ, the internal brush of which is black or blackish in color and not fulvous. Length 30.5 mm.; width 12.5 mm. Texas (El Paso),—Dunn.....**transversus** n. subsp.

B—Rather narrower and more parallel than either of the preceding, the mandibles (♂) closely strigose, becoming smooth apically, probably wholly strigose in the female; prothorax less transverse, barely one-half wider than long, of the same general form and with the impressions nearly as strong as in *californicus;* elytra less rounded at the sides and with still narrower margin, impunctate,

less convex than in either of the preceding, the margins black, with the faintest possible bluish tinge; hind tarsi (♂) still longer, evidently longer than the tibiæ, the brush of hair fulvous as in *californicus*. Length 30.5 mm.; width 11.7 mm. Texas.
validus Lec.

Elytra broadly oval, more rounded at the sides, the margins throughout wider, as in *depressus* and bright violaceous-blue; head very large, the mandibles and labrum as in *californicus*, the median lobe of the latter a little more truncate or feebly bilobate; prothorax one-half wider than long, of different form, being more narrowed toward base and widest but little before the middle, the base much narrower than the apex; lateral and basal grooves attaining the angles, which are right and very sharp, the sides parallel near them for a moderate distance; impressions deep, strongly united with the impressions near the angles and also prolonged inwardly somewhat; elytra evenly oval, only moderately convex, smooth and impunctate; hind tarsi (♂) long and stout, much longer than the tibiæ, the dense inner brush of the latter pale fulvous. Length 31.5 mm.; width 12.0 mm. Texas (locality unrecorded)..... **cephalotes** n. sp.

Elytra as in the preceding but somewhat more narrowed basally, much smaller in size, deep black, the margins without the faintest indication of color and narrow as in *validus*, the pronotal margin even narrower; head smaller than in any of the four preceding, scarcely three-fourths as wide as the prothorax; antennæ (♀) much shorter, the mandibles strigose throughout; prothorax one-half wider than long, widest near apical third, the sides sinuate basally to the right and very sharp basal angles, the lateral and basal grooves entire, attaining the angles; impressions deep, the juxtangular very faint; elytra oval, with rounded sides, sensibly wider than the prothorax, the surface smooth, even and impunctate; legs rather short. Length 24.5 mm.; width 10.2 mm. New Mexico (Jemez Springs). A single female, sent by Mr. John Woodgate..... **acomanus** n. sp.

22—Form stout, convex, shining, deep black throughout, the side margins narrow, not at all tinted; head moderate, smaller than in the preceding group but otherwise similar, except that the antennæ are much shorter in both sexes; mandibles partially strigose; prothorax shorter, two-thirds wider than long, the base but little narrower than the apex; sides moderately converging behind, becoming broadly and rather feebly sinuate to the basal angles, which are right and sharp; marginal and basal grooves entire, attaining the angles, the impressions moderate or rather shallow, the stria well impressed; elytra a little wider than the prothorax, broadly oval, with rounded sides, the surface even, having geminate series of distinct punctures (♀), to smooth and punctureless (♂); hind tarsi (♂) about as long as the tibiæ, the brush of hairs of the latter rather short and stiff, pale fulvous and not very dense, much less developed than in the preceding group, or (♀) a little more slender though about as long as the tibiæ, the legs a little shorter than in the male. Length 25.5–27.5 mm.; width 10.6–11.3 mm. Texas (locality unrecorded)..... **corpulentus** Lec.

Form stout but a little more elongate, similar in color and lustre; head and labrum nearly similar; mandibles very different, not much shorter than the median line of the head, as they are in both sexes of *corpulentus*, but very much longer, as long as the head and covered throughout, except the extreme point, with a dense system of peculiarly anastomosing and very deep strigæ on the left, but with much more separated and less extended strigæ on the right, mandible, the toot -like inner prominence just beyond the large medial tooth strong and conspicuous, a little larger on the right than on the left mandible; prothorax much less transverse, rather less than one-half wider than long, the sinus at base more distinct, the angles less than right, sharp and somewhat everted; grooves and sulci almost similar; elytra slightly less abbreviated, nearly a third longer than wide, almost perfectly smooth and even, the concave side margin narrow; hind tarsi (♂) as long as the tibiæ, the internal brush of the latter rather short and only moderately dense. Length (excluding mandibles) 28.0 mm.; width 11.7 mm.; length of mandibles 5.0 mm. Arizona (probably southern).....**obesus** n. sp.

23—Humeral carina short but not descending, its form as in the *californicus* group preceding; body moderately convex, deep black, shining, the lateral margins always black, the concave side margins of the elytra unusually narrow; hind tarsi rather stout, about equal in length to the tibiæ in both sexes, the tibiæ without any evident internal brush in the male; punctures when present in single series, except near the sides, where they become more or less evidently geminate.....24

Humeral carinæ excessively short, descending to the basal margin; lateral margins broader, colored; general habitus widely diverse..26

24—Sides of the prothorax converging posteriorly but with the basal sinus rather feeble and short; elytra more gradually acuminate and prolonged apically. Body small, narrowly elongate-oval, rather convex; head rather small, the impressions linear, deep, the median lobe of the labrum narrow, tumid, smooth and strongly rounded; mandibles very moderate, the left rather closely, the right more sparsely and restrictedly, strigose; prothorax fully one-half wider than long, the base evidently but not greatly narrower than the apex; marginal bead much thicker basally, the groove and basal furrow entire, attaining the angles, which are right, the impressions small but deep; elytra nearly one-half longer than wide, oval, subequal in width to the prothorax, the sides broadly rounded, not more converging basally, the surface smooth and impunctate, even throughout, except that there are a few feebly raised lines, more visible apically but not externally. Length 22.0 mm.; width 9.0 mm. A single example, without indication of locality, from the Levette collection and probably taken in Colorado..**acuminatus** n. sp.

Sides of the prothorax more converging posteriorly, the base narrower, evidently narrower than the apex, the sinus longer and stronger, the sides parallel and either straight or sinuate for some distance before the basal angles; elytra more obtusely and rapidly pointed behind.....25

25—Form moderately stout, rather convex, the side margins narrow; head very moderate in size, the mandibles rather small, partially strigilate, the labrum as in *acuminatus* and the two following; impressions moderate; prothorax a little more than one-half wider than long, the base evidently but not at all pronouncedly narrower than the apex, the grooves entire, uniting at the sharply right angles, the impressions deep, linear; elytra equal in width to the prothorax, fully two-fifths longer than wide, moderately acuminate at tip, very narrowly margined; surface with widely spaced and slightly impressed single striæ of distinct punctures, with a strong lateral ridge in prolongation of the humeral carina and another near and immediately exterior to it equally pronounced, both extending to the apical declivity, also, just within the principal ridge, a wide and feeble ridge separating the two outer dorsal series of punctures, which are irregularly somewhat geminate. Length 22.0 mm.; width 8.5 mm. Colorado.....**obsoletus** Lec.

Form stouter, similarly black, shining, with very narrow side margins and evidently larger head, the mandibles moderate and having only a few strigæ; labrum similar; impressions broader and deeper; antennæ notably more elongate; prothorax still more transverse, three-fifths wider than long, the grooves nearly similar, the impressions short, linear and deep, the small juxtangular impression deep, wholly disconnected from the median pair as in *obsoletus;* elytra broader, convex, smooth and even, having very faint and widely spaced single series of obsolescent punctures, which become geminate laterally and having barely a trace of the strong lateral ridges of *obsoletus;* in some specimens even these vestigial series of punctures are wholly invisible, the surface very smooth and even throughout. Length 22.5 mm.; width 8.8–9.0 mm. New Mexico,—F. H. Snow; Texas (El Paso—Dunn and Marfa—Wickham)...**vestigialis** n. sp.

Form more elongate, much larger in size, the head still larger, the side margins scarcely at all less narrow; mandibles moderate, in great part strigose (♀), or with only a small area of oblique strigæ near the middle (♂); impressions similar; antennæ rather long, much shorter in the female; prothorax less transverse, barely one-half wider than long, the grooves and impressions nearly similar, the median pair of the latter more dilated inwardly at their posterior ends; elytra more elongate, nearly one-half longer than wide, even and very smooth throughout, seldom with the faintest trace of punctulation at any point; legs (♂) moderately long, the tarsi very nearly as long as the tibiæ and rather stout, the tibiæ with only about ten widely spaced stiff hairs within, or (♀) distinctly shorter throughout, the members similarly proportioned and the bristling hairs similar. Length 23.0–25.0 mm.; width 9.3–9.8 mm. Arizona (San Bernardino Ranch and Douglas, Cochise Co.; also from an unrecorded part of the state). A good series of six specimens, very homogeneous among themselves.....**atronitens** n. sp.

26—Form rather depressed, elongate, black, shining; prothorax with the lateral and basal margins bright brassy-green, shorter than wide, the sides rounded and narrowly margined posteriorly, very briefly

sinuate, the basal angles small and right; elytra subplanate, subovate, posteriorly subacute, with geminate series of punctures, the lateral and basal margins bright brassy-green, the margin more reflexed toward base; humeral carina excessively short, almost wanting; posterior tarsi not at all longer than the tibiæ. Length 27 mm. Mexico (Sonora),—Schott. A single example.

***viridans** Lec.

A—Form very elongate-oval and more depressed than in any of our other species of the genus, black, moderately shining to subopaque or very strongly alutaceous throughout above; margins of the prothorax and elytra as in *viridans* but bright emerald green, not at all brassy, the broad basal green fascia of the elytra widely interrupted medially; head moderately large, the impressions long, deep, the middle lobe of the labrum prominent and truncate, the mandibles as long as the median line of the head, partially strigose, the left the more strongly and closely strigate, differing but little sexually, the right with a small tooth beyond the large one, which is wholly wanting on the left mandible; prothorax one-half wider than long, much narrower at base than at apex but less so in the female, only very feebly convex, the sides almost evenly rounded, with a small abrupt sinus at the very sharp and right basal angles; base almost transversely truncate, the groove fine; impressions very feeble; elytra elongate, fully one-half longer than wide, oval, moderately acuminate, the reflexed margin rather wide, only feebly concave; surface throughout smooth, without vestige of punctuation; hind tarsi (♂) very long, much longer than the tibiæ, the latter with a moderate brush of hair within, or (♀) much shorter though a little longer than the tibiæ. Length (excluding mandibles) 25.5–26.0 mm.; width 9.8–10.2 mm. Arizona. Levette collection. Four homogeneous examples.

ambiens n. subsp.

Form still narrower and very convex, extremely smooth and polished, with rather narrow purplish side margins; head rather small, nearly as in *ambiens* throughout, except that the mandibles are shorter and more strongly and almost completely strigose; antennæ short in the type, which is apparently female; prothorax only two-fifths wider than long, the sides parallel and rather feebly arcuate in anterior two-thirds, then converging to the very short basal sinus, the angles right and very sharp; lateral groove narrow, not attaining the angles, the basal groove of all the other species wholly wanting; two subbasal impressions rather feeble, the stria strong; elytra elongate-oval, rather acuminate, equal in width to the prothorax, the sides broadly and evenly arcuate; concave margins narrow, broader basally, having the usual row of setigerous punctures; surface convex, very deeply and rapidly declivous at the sides, feebly concave along the suture, extremely smooth and glossy but with widely spaced series of fine and very feeble punctures, the series geminate laterally; humeral carina almost wanting; hind tarsi in the type rather stout, somewhat longer than the tibiæ, the legs rather

short. Length 23.0 mm.; width 8.7 mm. Mexico (Colonia Garcia, Chihuahua),—C. H. T. Townsend.....*perpolitus n. sp.

The form identified above as *assimilis* Lec., is decidedly distinct from *sublævis* in many ways and may be of specific value. *Robustus* is almost certainly a true species, differing from *strenuus*, not only in its smaller size, relatively smaller head and strong elytral sculpture, but in the form of the labrum and basal groove of the prothorax, both to a rather radical degree and also in its somewhat shorter tarsi; but it is left as a subspecies because the comparison has been made between single specimens, some of the characters mentioned perhaps being inconstant, though it is only fair to say that where large series are at hand of any particular species, no great inconstancy is evident. My two examples representing *subsulcatus* Say, differ somewhat; the one from Marion Co., is distinctly narrower than the one assumed to be typical and has much more obsolescent elytral sculpture, this alone being rather indecisive perhaps, but the pronotum is not so flattened near the angles, the lateral bead continuing visibly to the latter. In the former specimen the four large setigerous foveæ of the labrum are all strong, distinct and equal among themselves; in the latter, however, there is no trace whatever of the lateral foveæ and the median ones are very small and more advanced in position; the median lobe also is less strongly rounded. No definite conclusion can be formulated from such a character based upon single specimens however, and some others of the labral features mentioned would appear to be individually aberrational; they would be most surprising if confirmed by series.

The species of the *marginatus* group are peculiar in the marked sexual disparity in outline and convexity of the body, this being visible also, though to a slighter degree, in the *depressus* group. *Pimalis* is quite distinct from *elongatus* in its small mandibles, short prothorax and other features, but the four forms *angustulus*, *evanescens*, *vegasensis* and *vernicatus* are more closely allied, and, although easily differentiated on sight and differing in the structure of the labrum, form of the elytra and other characters, are of rather indeterminate status at present. Although the first two might be considered provisionally as subspecies of *elongatus*, I should be inclined to consider the last two both as fully valid species. There

seems to be a real and constant difference in the lateral contour of the prothorax toward the basal angles between all four of them and *elongatus*.

Duplicatus and *costifer*, as shown by the convex and obtuse form of body, peculiar outline of the prothorax, narrow side margins and twin lateral carinæ of the elytra—as well as the long humeral carinæ of the *depressus* and *elongatus* groups distinguishing them from any of the *obsoletus* group,—form a natural and isolated division of the genus; they differ from each other specifically and are not related subspecifically, as very conservatively maintained by LeConte in later years.

The El Paso male and Marfa female, which I have placed provisionally with the type of *vestigialis*, are probably different, forming at least a subspecies; they do not have a trace of the faint lines of punctures seen in the New Mexican type, taken by Prof. Snow, and are a little more convex. I am also of the opinion that the two very smooth and impunctate examples, placed above with the rather conspicuously punctate two typical specimens of *corpulentus*, represent a closely allied but different taxonomic form. Larger series are desirable however.

Viridans Lec., was said by the author (l. c.) to be a variety of *mexicanus*, but this was contradicted by Bates in the "Biologia." The form described above under the name *ambiens*, differs markedly from *viridans* in sculpture, as well as some other characters, and may be more than subspecifically different, for species in this group having brilliant green margins, are probably not limited to *mexicanus* and *viridans* alone, although the peculiar coloration is of a highly specialized type in the genus.

The left mandible is nearly always more strigose than the right in this genus and the strigosity is limited to a smaller area in the male than in the female; there are also other singular sexual differences hitherto unobserved, mentioned above in several instances, such as the general convexity of the upper surface in the *depressus* group and the supplemental dentition of the mandibles in *ambiens* and others. The complete absence of the basal groove of the pronotum in *perpolitus*—a character so universal in the genus—is an interesting peculiarity of that species.

Promecognathus Chaud.

This genus is singularly out of position in the Munich catalogue near *Broscus;* the mes-epimera broadly attain the middle coxæ and this, together with certain habital features, show that it should not be far removed from *Pasimachus* and *Scarites.* There are few genera in which the errors of the eye in comparative measurements are so patent as here; for example, in most of the species it would be stated with great certainty that the prothorax is longer than wide, and, when this condition obtains, I will state "apparently longer than wide"; but, when we come to make accurate measurements by scale, it is seen that not only is this part not actually longer than wide but generally quite the reverse. There are two divisions of the genus as follows:

Elytra elongate-oval, the epipleura rather gradually and moderately dilated at base 2

Elytra more abbreviated, the epipleura more rapidly and broadly expanded at base 3

2—Mandibles longer, straight, becoming decidedly arcuate only rather beyond the middle; body deep black, polished; antennæ rather short; prothorax sinuously narrowed basally and apparently much longer than wide; elytra evenly oval, a third wider than the prothorax, nearly one-half longer than wide. Length (excluding mandibles in all cases) 9.0–11.0 mm.; width 3.2–4.0 mm. California (coast regions near San Francisco). Very abundant and varying considerably in size. . . . . **lævissimus** Dej.

Mandibles shorter, almost evenly arcuate from near the base to the apex; body much smaller and distinctly more slender, piceo-rufous; head relatively narrower; antennæ still shorter; prothorax slender, actually longer than wide; elytra more elongate, without trace of striation. Length 8.0 mm.; width 2.5 mm. California (Sta. Cruz). **debilis** Csy.

3—Prothorax apparently longer than wide; head distinctly narrower than the prothorax 4

Prothorax apparently as wide as long, actually much wider than long; head very large, barely narrower than the prothorax 6

4—Mandibles smaller, short, not as long as the head, the latter much narrower than the prothorax, which is much expanded anteriorly, broadly and feebly impressed at the sides of the base, the latter parallel and straight for some distance as usual; base truncate, three-fifths the maximum width, the angles right and sharp; elytra almost one-half wider than the prothorax, oval, with rather distinct though rounded humeri, not quite one-half longer than wide, with fine and feeble, finely punctulate striæ, obsolete except inwardly; base of the epipleura a fifth wider than the diameter of the middle coxæ; male with a feeble close-set brush of hair internally toward

tip as in some *Pasimachi.* Length (♂) 9.7 mm.; width 3.8 mm. California (Lake Co.),—Fuchs..... **contractus** n. sp.

Mandibles elongate, as long as the head and neck or very nearly.....5

5—Mandibles unusually long, fully as long as the head and neck, the median tooth of the left rather abrupt and strong, of the right not quite so developed; palpi slender and pale as usual; head with the usual two longitudinal folds near the eye inclosing two setigerous punctures; prothorax apparently longer than wide but actually a little wider than long, formed as in the preceding; elytra two-fifths wider than the prothorax, a third longer than wide, oblong-oval, truncate at base, the humeri rather distinct and not broadly rounded; surface convex, shining, with traces of very fine and obsoletely punctulate striæ suturally; basal part of the epipleura broader, fully a fourth wider than the middle coxæ; tibiæ with feeble internal brush in all the three examples at hand. Length 10.0–11.5 mm.; width 3.9–4.5 mm. California (locality unrecorded),—Levette collection..... **crassus** Lec.

Mandibles not quite so long and with the internal medial tooth of the left very broad and obtuse; hind tibia in type with feeble brush of short hairs, the penultimate antennal joint on the flat side nearly three-fifths longer than wide and much narrowed basally from about the middle; inner fold near the eye much broader, becoming narrow posteriorly for a much shorter distance than in *crassus;* body throughout broader than in *crassus*, the prothorax similar but larger and similarly a little wider than the head but apparently barely at all longer than wide; elytra larger, somewhat stouter but otherwise nearly similar and with very fine vestigial striation; epipleura at base rather more than a fourth wider than the middle coxæ. Length 12.5 m .; width 4.9 mm. California (Monterey),—Dunn. **corpulentus** n. sp.

6—Body larger, very stout, deep black, shining; head very large, the inner ridge broad, not cariniform though pointed posteriorly; mandibles slightly shorter than the head, with only the feeblest broad swelling to indicate the median tooth—possibly in part through wear;—prothorax large, apparently fully as wide as long, in general form as in the other species; elytra large, not two-fifths wider than the prothorax, a third longer than wide, broadly truncate at base, with distinct though rounded humeri, the sides less arcuate than in any of the three preceding; epipleura at base a fourth wider than the middle coxæ; hind tibiæ in the type with a feeble short brush. Length 13.5 mm.; width 5.0 mm. California (locality unrecorded). **grandiceps** n. sp.

Sexual characters seem to be almost wanting, as in *Pasimachus* and *Scarites*, and I am uncertain whether even the tibial brush alluded to in the descriptions is truly a sexual character or not, as it seems to be present in most of the specimens at hand, including a large series of *lævissimus*, which is abundant in the suburbs of

San Francisco. The species are to be mutually distinguished more by general habitus than special modifications of a structural nature —again as in *Scarites*.

Feronia Group.

About twenty-five years ago, the writer during a residence in the Pacific districts, brought together a large amount of material in *Pterostichus* and allied genera, including extended series of many species, and, since that time, this collection has been considerably augmented from all parts of the country. After identifying a large proportion of the described species and confirming most of the published synonymy, it is found that a very large part of this material is still nondescript and it seems desirable that it should be recorded in a systematic manner and the published types thus rendered available for discussion and comparison in one of our public museums. It is impossible to identify several of the species of Mannerheim, Motschulsky and Chaudoir, and in case foreign museums should be willing to lend such American museum the types for study and observation, this direct comparison, which is the only way to identify them, would forever banish the uncertainties that have in great measure retarded progress and such synonymy as might become evident could readily be recorded. It is hardly advisable to cease all systematic work, merely because a considerable number of the older species cannot be identified and future revelation of synonymy can do no great harm.

The genera erected by LeConte at the expense of *Pterostichus*, as it exists in America (Proc. Acad. Phila., 1873, p. 302) are in my opinion all valid, the weakest perhaps being *Holciophorus*. I would modify the scope of the latter genus in such a way as to make the peculiar habitus, which distinguishes *ater* from the other Pterostichids, its principal *raison d'être*, excluding therefore *serripes*, which has the facies of *planctus* and *tarsalis*, and include with *ater* the *morionides*, of Chaudoir, which has precisely the habitus of *ater* and is principally distinguished therefrom by the unique and highly specialized tarsi, the form of the latter not being suggested by the tarsi of *tarsalis*, included with *morionides* in our lists as a distinct genus—*Hammatomerus* Chaud. The three examples of *tarsalis* at hand, taken on the shores of Lake Tahoe, have a facies

not at all different from that of *serripes*, *planctus* and *herculaneus* and the emargination of the epistoma and labrum, alluded to by LeConte, is only a broad and moderate sinuation from side to side, frequently observable in other species of *Pterostichus*.

Holciophorus Lec.

This genus includes an unexpectedly large number of specific forms. *Ater* Dej., was not correctly identified by LeConte, who applied the name to the very large species, with fine striæ, flat intervals and more or less opaque elytra, of which there are a number at present in collections. A reference to the original description of Dejean (Spp. des Col. III, p. 339) shows that *ater* is entirely of a rather shining black, with fine striæ and flat intervals, and that it is a much smaller species than those to which the name is usually attached, being only 19 by 7 mm. in dimensions. The specimen in my collection which I have selected to represent *ater*, is a female, slightly larger than the measurements given by Dejean, but having the prothorax, as stated, almost as long as wide; it is shining, with the elytra subopaque—probably due in part to sex—and is from Portland, Oregon. The species, or possibly in some cases what may be considered subspecies, before me may be known as follows:

Joints of the middle and hind tarsi gradually narrowed from apex to base.....2

Joints of the middle and hind tarsi constricted and pedicellate basally; prothorax as in *ater*.....6

2—Sides of the prothorax becoming straight and nearly parallel for some distance before the basal angles, which are right or very nearly so though more or less blunt.....3

Sides of the prothorax oblique and more feebly sinuate basally, the angles distinctly obtuse and often very blunt.....5

3—Form slender, the head moderate, only a little more than half as wide as the elytra, deep black, strongly shining, the elytra strongly micro-reticulate and alutaceous; head scarcely two-thirds as wide as the prothorax, the apical impressions deep but not large, the epistoma and labrum only just visibly and broadly sinuate from side to side; antennæ moderately thick and compressed, gradually brown distally; prothorax almost as long as wide, strongly narrowed basally, the base rectilinearly truncate, a little more than two-thirds the maximum width, the two latero-basal lineiform impressions forming the lateral limits of a large deep impression; elytra more convex than in any other, a fifth wider than the prothorax, two-thirds longer than wide, the striæ fine but evidently impressed and finely, not closely but distinctly punctate, the intervals becoming rather strongly

convex laterally, almost but not quite flat suturally; hind tarsi rather short, stout, the basal joint less than two and one-half times as long as wide. Length (♂) 19.5 mm.; width 6.5 m. Vancouver Island (Victoria)..... **vancouveri** n. sp.

Form stouter, the head relatively larger, at least three-fourths as wide as the prothorax.....4

4—Size smaller, deep black, shining, the elytra densely alutaceous and rather dull in lustre; head three-fourths as wide as the prothorax, the anterior impressions, as usual, lineiform and deep, the epistoma broadly sinuate from side to side, the labrum broadly, angularly emarginate medially; antennæ extending well behind the thoracic base, the first three joints black, the remainder having a brownish tinge; prothorax but little wider than long, the base broadly sinuate medially, two-thirds the maximum width, the latero-basal impressions long and linear, separated by a shining, convex, scarcely depressed surface, the basal marginal stria not extending inward beyond the inner impression; elytra fully a fourth wider than the prothorax, oblong-oval, fully three-fifths longer than wide, feebly convex, with fine and feebly impressed, finely but distinctly punctate striæ and nearly flat intervals; hind tarsi rather long, moderately stout, the first joint about three times as long as wide. Length (♀) 23.0 mm.; width 8.2 mm. Oregon..... **ater** Dej.

Size large, rather stouter, similar in color and lustre; head (♂) nearly four-fifths, or (♀) three-fourths, as wide as the prothorax, the epistoma feebly, subangularly sinuate from side to side, the labrum rather deeply sinuate in median half; antennæ heavy and strongly compressed, nearly one-half longer than the head and mandibles, the latter with broad smooth longitudinal folds medially; prothorax transverse, fully a fourth wider than long, the sides rounded, strongly converging posteriorly, the base two-thirds the maximum width, broadly and feebly sinuate medially, the impressions nearly as in the preceding, except that the intervening surface is a little more depressed though shining; elytra (♂) a sixth wider than the prothorax and nearly three-fifths longer than wide, or (♀) fully a third wider than the prothorax and less than one-half longer than wide, more broadly obtuse at apex but only a little more opaculate, oblong-oval in both sexes, the striæ fine, very finely and rather remotely punctate, the intervals flat, feebly convex laterally and distinctly so near the apex; hind tarsi rather long, moderately stout, the basal joint fully three times as long as wide in both sexes. Length (♂) 26.0–28.0, (♀) 25.5 mm.; width (♂) 9.2–10.0, (♀) 9.6 mm. California (Lake Tahoe)..... **pollens** n. sp.

5—Mandibles bent inward at apex very obliquely and almost transversely, having some long oblique smooth folds medially; coloration and lustre as usual, the elytra a little more opaque; head four-fifths as wide as the prothorax, the impressions not very deep and not sharply defined, the epistoma very feebly sinuate from side to side, the labrum rather deeply sinuate in median half; antennæ with the first four joints black, the remainder brownish; prothorax

almost a third wider than long, the base rather strongly sinuate medially, two-thirds the maximum width, the impressions as in the preceding, the angles very obtuse and rather broadly rounded; elytra unusually short and very feebly convex, oblong, parallel, with broadly arcuate sides and very broadly obtuse apex, fully a fourth wider than the prothorax and scarcely one-half longer than wide, the striæ very fine, scarcely at all impressed, except feebly at the sides, very finely and remotely punctulate, the intervals flat; hind tarsi as in the preceding, rather stout. Length (♂) 27.0 mm.; width 9.8 mm. A single example marked "California" in the Levette collection. . . . . **cephalus** n. sp.

Mandibles bent inward much less obliquely at apex, the external angle broadly rounded, their upper surface without evident long smooth folds; hind tarsi of the usual stoutness but shorter than in either of the preceding, the first joint barely two and one-half times as long as wide; body similar in color, lustre and in feeble convexity to the preceding; head a little less developed, only a little more than two-thirds as wide as the prothorax, otherwise nearly as in *cephalus* throughout; prothorax scarcely a fourth wider than long, a little more transverse in the female, the base and impressions nearly similar, the angles obtuse and only slightly blunt (♂) but rounded (♀), the sides before them only feebly sinuate; elytra parallel, with feebly arcuate sides and very obtuse apex, a fourth wider than the prothorax and nearly three-fifths longer than wide, slightly shorter in the female, the striæ less fine and rather more distinctly and usually more closely punctate, the intervals flat. Length (♂) 26.0, (♀) 24.5 mm.; width (♂) 9.2, (♀) 9.5 mm. Two examples without locality label. . . . . **domitor** n. sp.

6—Form narrower and more elongate, rather more convex than any of the preceding species except *vancouveri*, deep black and shining, the elytra not dull in either sex; head large, four-fifths (♂) to three-fourths (♀) as wide as the prothorax, the sides behind the eyes more swollen and longer than in any of the preceding, the impressions and antennæ nearly similar, the epistoma slightly more impresso-sinuate, but with the lower margin only feebly sinuate, the labrum similarly sinuate medially, the mandibles smooth, not abruptly inflexed apically; prothorax similar in form to the preceding, the impressions almost similar; elytra about a sixth (♂) to nearly a fourth (♀) wider than the prothorax, three-fourths to three-fifths longer than wide respectively, moderately convex, the striæ fine, feebly impressed, more deeply so laterally and with the punctures so fine as to be obsolescent, the intervals feebly convex, rather strongly so laterally and apically; hind tarsi stout, gradually feebly tapering, nearly four-fifths as long as the tibiæ, the joints slender at base, abruptly and very strongly swollen in their apical halves, with a constriction just before the expansion, the basal joint relatively much shorter than in any of the preceding, the first four joints very gradually and uniformly diminishing in length; male larger and stouter than the female and with more developed head. Length

(♂) 21.0, (♀) 18.5–19.0 mm.; width (♂) 6.9, (♀) 6.2 mm. California (Placer Co.).....**morionides** Chd.

The tarsal peculiarities in *morionides* are extremely marked, not only in the form of the joints but in the relatively short basal joint, but, in view of the marked similarity in general habitus of the body, I cannot regard this as at all generic in significance, but only a peculiar development in a special organ due to some isolated feature of environment. Nearly all the species have the last male ventral segment strongly carinate medially, the carina not attaining the base and more prominently elevated near its anterior limit, with the surface impressed along each side of the carina; this carina varies but little from one species to another of the typical *Holciophori;* it is however much shorter in *cephalus* than in *domitor*, *pollens* or *vancouveri*, and, in *domitor*, the tuberculiform elevation is at the centre of the disk, while in *pollens* it is far anterior to the centre. In *morionides*, however, it is wholly obsolete, but, as it reappears in a greatly modified form in certain species of *Pterostichus*, such as *serripes* and *adoxus*, I do not think that it can be held to possess generic value of any great weight, except in indicating groups of species. At any rate, it is my conviction that general habitus is by far the most important structural character for estimation of genera in the difficult *Feronia* group.

Pterostichus Bon.

Among our species at present listed under this name, there are several groups that could well be considered generic. In fact the Munich catalogue has distributed many of them among such genera as *Argutor*, *Omaseus*, *Steropus*—erroneously including *Evarthrus* Lec. —and *Platysma*, but in a manner very confusing and frequently incorrect. However, as it would answer no good purpose to assign the vast majority of our species to genera other than *Pterostichus*, until a general study of the species of the world could be undertaken, I shall not attempt such partition except in a few cases.

The species of LeConte's first division, having no dorsal elytral foveæ, are extremely numerous on the Pacific coast and, though closely allied among themselves, in many instances, can always be recognized at a glance when juxtaposed in series. For convenience of reference I would divide this section of the genus, which is entirely

Pacific, excepting the Atlantic *adoxus* group, into several groups based almost wholly upon general facies. These habital groups seem to be entirely natural and clearly delimited subdivisions, as shown when we come to examine their anatomy more in detail. Designating these minor subdivisions by the names of certain well known species, they can be recognized as once as follows:

Group I—*planctus* Lec.

The species of this group are as a rule peculiarly parallel in outline, with subrectilinear sides, the polished pronotum depressed to a greater or less degree, generally nearly flat and subquadrate, never strongly narrowed behind and having the latero-basal impression large, elongate and unusually conspicuous; the lateral edges are frequently crenulate in a feebly marked and irregular manner and the elytral striæ almost always deeply impressed, with strongly convex intervals. This simply gives a general sketch of the group, the species of which are very numerous and possibly identifiable as follows:

Body more parallel, the elytra never more than just visibly wider than the prothorax; hind tarsi shorter and usually much stouter, or at least with the first joint always much shorter than the next two combined, simple to very lightly grooved on the outer side; hind tibiæ (♂) more or less crenulate internally throughout.....2

Body less parallel, the elytra always rather distinctly wider than the prothorax, the hind tarsi longer and more slender, with the first joint always strongly grooved on the outer side and usually nearly as long as the next two combined.....9

2—Larger species, not under 16 mm. in length.....3

Smaller species, not exceeding 12 mm. in length.....5

3—Body deep black, slightly convex, rather dull in lustre; head two-thirds as wide as the prothorax, the epistoma and labrum feebly and evenly sinuate from side to side; antennæ stout, attaining the thoracic base, blackish, the basal joint dark rufous; prothorax slightly wider than long, the sides broadly rounded, feebly converging and broadly, feebly sinuate basally, the base sinuate medially, four-fifths the maximum width, the impressions at each side broad and feeble, subconfluent; elytra oblong-oval, one-half longer than wide, obtusely but not abruptly rounded at apex, nearly a fifth wider than the prothorax, the striæ very fine, scarcely at all punctulate or impressed, the intervals almost flat, convex laterally; hind tarsi short and not very stout, the joints normal in form, narrowing basally and feebly inflated apically; serrulation along the inner edge of the hind tibiæ unusually distinct though obtuse; female much smaller than the male. Length (♂ ♀) 17.5–20.0 mm.; width 6.2–7.0 mm. California.....**serripes** Lec.

Body black but much more depressed, shining throughout in both sexes and much more flattened on the upper surface, more explanate and more broadly margined at the sides of the elytra.....4

4—Form elongate, parallel, not very intense black, the under surface and legs frequently picescent; head not so large as in *serripes*, three-fifths as wide as the prothorax, the epistoma and labrum similarly broadly sinuate from side to side, the antennæ not quite so long or thick, scarcely extending to the thoracic base, rufescent at base; prothorax widest anteriorly and about equal in width to the elytra, moderately narrowed and broadly, feebly sinuate at the sides basally, the base broadly and distinctly sinuate medially, four-fifths the maximum width; surface almost flat, the median stria strong; inner of the lateral impressions long, shallowly impressed, the outer very short, more sharply impressed and bounded externally by a small longitudinal ridge not extending quite to the hind angles; elytra oblong, parallel, the sides barely at all arcuate, one-half longer than wide, subcircularly rounded at tip, the humeri dentiform; surface very depressed, broadly and feebly declivous laterally, the striæ rather strong, very deeply impressed, finely punctate, the intervals all strongly convex, not at all crenated by the punctures, which are fine and at the bottom of the striæ; hind tarsi short, notably stout, the joints as in the preceding but shorter and broader; inner tibial crenulation of the male obtusely rounded but distinct. Length (♂) 17.3–18.0 mm.; width 6.3–6.8 mm. California (Lake Tahoe).....**tarsalis** Lec.

Form much less elongate, similar in coloration and polished lustre; head not quite two-thirds as wide as the prothorax, the epistoma, labrum and antennæ nearly as in *tarsalis*, except that the antennæ are scarcely at all paler at base; prothorax nearly a fourth wider than long, formed throughout nearly as in the preceding; elytra much shorter and relatively broader, two-fifths longer than wide and more than a fourth wider than the prothorax, the parallel sides more arcuate, the surface rather less depressed, less gradually declivous toward the broadly concave margins; striæ strong, very deeply impressed, finely but strongly punctate, the punctures feebly crenating the very convex intervals; tarsi almost similar, the crenelures of the tibiæ obsolete in the female as usual. Length (♀) 17.0 mm.; width 6.7 mm. California (Big Trees).....**sequoiarum** n. sp.

5—Elytra equal in width to the prothorax or but just visibly wider..6

Elytra more oval, at the middle very evidently wider than the prothorax.8

6—Elytra with distinct violaceous lustre, black, strongly shining, elongate, parallel, feebly convex; head moderate, only three-fifths as wide as the prothorax, the anterior impressions rather fine, arcuate, the epistoma and labrum barely visibly sinuate, the latter, as well as the palpi and antennæ except sometimes basally, obscure to paler testaceous; prothorax about as long as wide, broadly rounded at the sides, feebly, obliquely and subsinuously narrowing posteriorly, the base nearly five-sixths the maximum width, broadly sinuate medially, margined laterally, the angles sharp but rather more than right, the inner of the lateral impressions strong, long and straight, the

outer very feeble, sometimes represented by a small isolated rounded impression; elytra oblong, three-fifths longer than wide, the parallel sides feebly arcuate, the humeri only very minutely denticulate; striæ fine, impunctate, rather well impressed, the intervals feebly convex inwardly, strongly so laterally; hind femora (♂) obtusely and subangularly swollen beneath a little beyond the middle, the tibiæ feebly bent, the inner crenelures of the male very long, feeble and wave-like, the tarsi only slightly stout, the outer groove of the basal joint not attaining the apex. Length (♂) 11.8–12.5, (♀) 10.0–11.7 mm.; width (♂) 4.2–4.6, (♀) 3.9–4.25 mm. British Columbia (Metlakatla) to Alaska..... **amethystinus** Dej.

A—Similar to the preceding but still narrower and with notably less brilliant violaceous elytral lustre, the elytra nearly two-thirds longer than wide, with still finer and less impressed striæ, the intervals usually nearly flat throughout the width, the hind legs similar, except that the tarsal joints are slightly more constricted basally. Length (♂) 10.3–12.0, (♀) 9.5–11.2; width (♂) 3.65–4.3, (♀) 3.5–4.15 mm. Northern California to Vancouver Island.

novellus n. subsp.

B—Similar to *amethystinus* but much smaller and more slender, with the prothorax not about as long as wide but distinctly wider than long and with more strongly arcuate sides, the fine line diverging from the margin posteriorly and approaching the inner impression, then abruptly turning outward to the extreme tip of the basal angles, more distinct and sharply defined than it ever is in *amethystinus;* elytra narrower, sometimes barely as wide as the prothorax; hind tarsi more slender, with the joints less cordiform but not so slender or with so rectilinearly triangular joints as in *jejunus*. Length (♀) 8.7–9.8 mm.; width 3.15–3.6 mm. British Columbia (Metlakatla),—Keen..... **metlakatlæ** n. subsp.

Elytra without trace of violaceous lustre.....7

7—Form more broadly oblong, parallel, depressed, deep black and strongly shining; head as in the preceding, the palpi testaceous, the antennæ and labrum piceous; impressions distinct, arcuate and very strongly diverging posteriorly; prothorax almost as long as wide, the sides broadly arcuate, obliquely and feebly converging posteriorly, becoming not distinctly subsinuate basally, the angles finely, subdenticularly prominent; base and impressions as in the preceding, except that the longitudinal impression is much shallower; elytra much shorter, barely one-half longer than wide, the parallel sides feebly arcuate, the striæ rather fine but very deeply impressed throughout, impunctate, the intervals all strongly and subequally convex; legs short, the posterior (♂) with the femora only feebly, obtusely swollen beneath, the tibiæ straight, strongly but obtusely crenulate within except basally, the tarsi short and unusually stout, the basal joint not quite twice as long as wide, with the external groove very feebly impressed though entire. Length (♂) 11.5–12.5 mm.; width 4.2–4.65 mm. California (Monterey),—Dunn.

obsidianus n. sp.

Form more elongate, nearly as in *amethystinus* but with longer elytra

and differently impressed pronotum, black, feebly convex, shining; head moderate, with very deep anterior impressions, the epistoma and labrum broadly and feebly sinuate at tip; antennæ piceous; prothorax as in *amethystinus*, except that the external of the two latero-basal impressions is not feeble and rounded but deep, elongate and linear, with its external side cariniform, the angles nearly right but slightly blunt, the inner longitudinal impression deep and strong; elytra nearly three-fourths longer than wide, the sides parallel, feebly arcuate, the striæ fine, impunctate, feebly to strongly impressed intero-externally, the intervals virtually flat to distinctly convex correspondingly; humeri rather strongly denticulate; hind legs missing in the type. Length (♀) 12.5 mm.; width 4.8 mm. British Columbia. A single example sent by Prof. James F. Kemp.

scenicus n. sp.

Form still narrower and more elongate, smaller in size, strongly shining and very pale yellowish-testaceous throughout in the type—probably from immaturity, although the integuments are full and firm and with no indication of distortion on drying;—head three-fifths as wide as the prothorax, the impressions fine, arcuate and diverging; prothorax as long as wide, feebly convex, the sides broadly and moderately arcuate, feebly converging but becoming not evidently more than straight basally, the angles slightly and minutely prominent, sharp and right; base feebly sinuate medially, four-fifths the maximum width; surface depressed and feebly rugulose between the transverse impression and the base, with a larger feeble concavity involving the latero-basal impressions, which are feeble, the inner only a fourth the total length, the outer almost obsolete; elytra elongate-oval, not evidently wider than the prothorax, broadly rounded at the sides, rather acutely rounded at apex, three-fourths longer than wide, the moderate impunctate striæ rather deeply impressed, the intervals feebly convex, strongly so laterad; humeral denticle very small; scutellar stria long, joining the first stria at a long distance behind the scutellum; legs moderate, the tibiæ (♂) feebly crenulate within, the tarsi rather stout, the basal joint shorter than the next two, grooved at the side, the second not grooved. Length (♂) 11.5 mm.; width 3.7 mm. California (Sta. Cruz Mts.).

arcanus n. sp.

♀—Body rather small in size and suboblong, feebly convex, shining, piceous-black to black, the entire under surface, legs, antennæ and labrum piceo-rufous; head moderate, the impressions rather shallow, diverging, the epistoma and labrum truncate; prothorax slightly shorter than wide, the sides broadly arcuate, feebly oblique posteriorly, becoming just visibly subsinuate near the angles, which are more than right though minutely, subdenticularly prominent; base feebly sinuate medially, margined laterally, the latero-basal impressions moderate, the inner long but not very deep, the outer small and almost obsolete; elytra oblong-oval, barely one-half longer than wide, depressed above, strongly declivous laterad, with strong, impunctate and deeply impressed striæ and moderately convex intervals, sometimes becoming nearly flat suturally; supplemental

basal stria rather long and distinct; hind legs (♂) scarcely modified, the tarsi short, moderately stout, the outer groove of the first joint faint and coming far from attaining the apex. Length (♂ ♀) 9.4–10.7 mm.; width 3.4–3.8 mm. California (coast regions north of San Francisco). [*scutellaris* Lec.]..... **brunneus** Dej.

Body still smaller, elongate-suboval, rather strongly convex, black, shining, the elytra alutaceous and with faint violaceous suffusion; under surface, legs and antennæ dark reddish-brown; head moderate, the impressions deep, parallel, internally arcuate and extending to the line of the anterior limit of the eyes; labrum truncate, the epistoma sinuato-truncate; prothorax in outline as in the preceding, the inner of the two impressions rectilinear and sharply defined, the outer almost obsolete; elytra oval, almost equally convex throughout, rather more than one-half longer than wide and nearly a fourth wider than the prothorax, striæ fine though rather strongly impressed, impunctate, the intervals feebly convex internally to strongly so externally, the humeral denticulation extremely minute; supplemental or scutellar stria short but distinct, oblique; hind tarsi more slender than in any of the preceding species, the basal joint much shorter than the next two combined, the external groove shallow but entire, the fourth joint nearly one-half longer than wide. Length (♀) 8.7 mm.; width 3.2 mm. A single example unlabeled in the Levette collection but undoubtedly from the Pacific coast and probably from California. The species rightfully belongs to the *amethystinus* series, but has very much more slender tarsi, having more triangular and not cordiform joints. . **jejunus** n. sp.

9—Elytra with obvious violaceous lustre..... 10

Elytra without trace of violaceous lustre 12

10—Elytra short, scarcely more than a third longer than wide and sexually nearly similar in lustre and striation. Body notably short and stout in form, somewhat convex, polished, the elytra strongly alutaceous, with the micro-reticulation distinct; head almost three-fourths as wide as the prothorax, the distinct subparallel impressions separated by nearly one-half more than either from the sides, the epistoma and labrum rather broad, evenly and very distinctly sinuate from side to side; antennæ moderate, pale brownish-testaceous, the four basal joints abruptly blackish-piceous; prothorax large, just visibly wider than long, the sides feebly and irregularly crenulate, broadly rounded, becoming moderately convergent and broadly, feebly sinuate to the right and rather sharp angles, the base broadly sinuate medially; impressions large and deep, one-third as long as the disk, the concavity limited externally by a short feeble longitudinal ridge near the margin, extending to the base; elytra broadly, evenly convex, opaculate in both sexes, with rather fine impunctate and moderately impressed striæ, the intervals broadly and only very feebly convex, more distinctly laterad, oblong-oval, broadly, obtusely, rounded behind, fully two-fifths wider than the prothorax, the scutellar stria distinct, oblique; legs rather slender, the hind tibiæ (♂) with a few broadly rounded and very feeble crenules internally, wanting (♀) as usual, the tarsi slender, the first

two joints grooved externally. Length (♂♀) 14.0–14.6 mm.; width 5.4–5.8 mm. California (Anderson Valley, Mendocino Co.). Four examples..... **breviusculus** n. sp.

A—Similar except that the body is a little larger and a trifle less abbreviated, with the elytra a little more shining, more distinctly violaceous and with rather less convex intervals; differing principally, however, in having the sides of the prothorax posteriorly simply oblique and virtually straight, not sinuate, the hind tarsi, also, are a little longer. Length (♀) 15.5 mm.; width 5.9 mm. California (Sonoma Co.),—Koebele..... **mimus** n. subsp.

Elytra more elongate, deeply striate, with very convex shining intervals (♂), or a little shorter, opaculate, with finer and feebler striæ and less convex intervals (♀)..... 11

11—Form elongate, very moderately convex, shining, black, the elytra distinctly violaceous; head rather large, fully three-fourths as wide as the prothorax, the anterior impressions deep and conspicuous, separated by barely a third more than either from the sides, the epistoma and labrum relatively narrower than in the preceding, both feebly sinuate, the latter subangularly; antennæ nearly as in the preceding; prothorax large, subquadrate, the sides broadly rounded, with very distinct and broad crenelures throughout, gradually very feebly converging and scarcely at all sinuate posteriorly, the angles rather more than right and blunt; surface with obvious transversely wavy subrugulose lines, the impressions as in the preceding; elytra (♂) fully three-fifths longer than wide and scarcely visibly wider than the prothorax, parallel, with broadly arcuate sides, the striæ deep, impunctate, the intervals all convex, the micro-reticulation evident but shining and, besides, with numerous feeble short transverse irregular indentations; hind tibiæ (♂) with broad rounded internal crenelures in apical two-thirds, the tarsi black, rather slender. Length (♂) 17.0 mm.; width 5.8 mm. Oregon (Clackamas Co.). **crenicollis** Lec.

Form almost similarly elongate but more ventricose, or with smaller head and prothorax; male strongly shining throughout, the female with shorter and broader, dull and less deeply striate elytra; head not so large as in *crenicollis* and with the anterior impressions separated by about one-half more than either from the sides, the epistoma and labrum nearly similar, the mandibles strongly, arcuately hooked at tip, the latter very acute; antennæ nearly similar; prothorax almost as long as wide, the sides nearly even and much more arcuate, distinctly converging and broadly sinuate basally, the angles but little more than right and rather sharp; surface with the transverse wavy lines indistinct, the impressions nearly as in *breviusculus;* elytra (♂) three-fifths longer than wide and a fourth wider than the prothorax, shining, with deep impunctate striæ and very convex intervals, or (♀) rather less than one-half longer than wide, fully a third wider than the prothorax, opaque, with finer, less impressed striæ and flatter intervals, also decidedly wider behind the middle than at base, this being but slightly apparent in the male; scutellar stria similar; tarsi slender, the hind tibiæ only very ob-

soletely and partially crenulate within in the male. Length (♂ ♀) 15.0–16.5 mm.; width 5.25–5.8 mm. California (Humboldt Co.). **suffusus** n. sp.

Form more slender, black, shining, the elytra in sculpture and lustre as in *crenicollis;* head much less developed, the anterior impressions separated by fully one-half more than either from the sides, the epistoma and labrum nearly similar; prothorax of very different form, fully as long as wide, the sides broadly and feebly crenulate but almost straight from apex to base, being but just visibly arcuate, becoming straight basally, the base feebly sinuate medially, arcuate near the angles and five-sixths the maximum width, the angles slightly obtuse and blunt; surface similarly impressed, the wavy lines nearly obsolete; elytra nearly three-fourths longer than wide, parallel, with feebly arcuate sides and rounded apex, nearly a third wider than the prothorax, the striæ rather fine but deeply impressed, the intervals shining though micro-reticulate and also feebly, indefinitely sculptured or subpunctulate along their crests, strongly convex, becoming much less so suturally; hind tibiæ (♂) with about four very low long wave-like internal crenelures, the tarsi slender. Length (♂) 15.0 mm.; width 5.3 mm. Oregon (Clackamas Co.). **rectilatus** n. sp.

12—Elytra a little wider behind the middle than at base, notably so in the female; hind tibiæ more or less crenulate within in the male. . . 13

Elytra evenly oval or oblong-oval. 15

13—Elytra shorter, not more than one-half longer than wide. Body rather broadly suboblong, moderately convex, deep black, shining, the elytra feebly alutaceous (♂), opaque (♀); head rather large, fully two-thirds as wide as the prothorax, the impressions deep, feebly arcuate, separated by fully one-half more than either from the side, the epistoma and labrum feebly sinuato-truncate; antennæ piceous, gradually testaceous apically; prothorax slightly transverse, a fourth to fifth wider than long, the sides rounded, not distinctly crenulate, slightly converging, becoming broadly, feebly sinuate, to the feebly prominent but rather blunt angles, the base broad, feebly sinuate medially, fully five-sixths the maximum width; surface with feeble wavy lines, the inner lateral impression large, deep and a third the total length, the surface thence to the sides sloping upward, feebly convex and unmodified, except sometimes by a very fine and feeble juxta-marginal ridge, bordered inwardly by a very feeble impression; elytra (♂) a third or (♀) nearly two-fifths wider than the prothorax, rounded behind, very broadly and obtusely in the female, the striæ deeply impressed, the intervals strongly convex, more feebly in the female; hind tibiæ (♂) very feebly or scarcely visibly crenulate within, or (♀) simple, the tarsi rather long and slender. Length (♂ ♀) 14.0–16.0 mm.; width 5.6–6.0 mm. California (coast regions north of San Francisco). . . . . **plutonicus** n. sp.

Elytra more elongate. 14

14—Form elongate, deep black, strongly shining, the elytra in the female alutaceous; head nearly as in the preceding, except that the labrum is transversely truncate; antennæ more elongate, extending well

behind the thoracic base, similarly colored; prothorax large, almost as long as wide, the sides distinctly crenulate throughout, broadly rounded, feebly converging and straight posteriorly, the angles evidently obtuse though only a little blunt; surface with distinct wavy lines, the inner of the lateral impressions large and deep, the outer also deep but short, bounded externally by a nearly vertical wall; median stria coarse and deep; base feebly sinuate medially, broad, five-sixths the maximum width or even more; elytra two-thirds longer than wide or three-fifths (♀), a fourth (♂) to a third (♀) wider than the prothorax, the striæ impunctate, very deep, the intervals very convex throughout, broader and much flatter in the female; hind tibiæ (♂) strongly crenulate within except near the base, the tarsi rather long and slender. Length (♂ ♀) 15.8–17.0 mm.; width 5.7–6.0 mm. British Columbia (Metlakatla),—Keen.....**herculaneus** Mann.

Form even narrower, deep black, shining, the elytra rather dull in the female; head nearly as in the preceding, the antennæ not quite so long; prothorax as long as wide, a little more rounded at the sides and more sinuously narrowed basally, the edges only very finely and obsoletely crenulate, the angles slightly obtuse, blunt, the base broadly sinuate except near the sides, and nearly five-sixths the maximum width, the impressions similar, very deep and conspicuous, the wavy lines obsolete, except those radiating from the median stria, which are short and irregular; elytra nearly two-thirds longer than wide, barely a fourth wider than the prothorax, not very obtusely rounded behind, only just visibly wider behind the middle than at base, the striæ rather coarse and deeply impressed, impunctate, the intervals very moderately convex inwardly, strongly so externally; scutellar stria oblique, long, joining the first stria; humeral denticulation strong. Length (♀) 15.5 mm.; width 5.4 mm. Oregon (Clackamas Co.).....**pugetanus** n. sp.

Form rather narrow, smaller in size, deep black, polished, the elytra of the female opaculate; head well developed, the anterior impressions unusually large and deep, widely separated, the labrum and epistoma sinuato-truncate; antennæ rather slender, yellow-brown distally; prothorax only very slightly wider than long, nearly as in the preceding, except that there are no lines radiating from the median stria, the transverse wavy lines evident, the basal angles right and but slightly blunt; lateral edges feebly though rather coarsely crenulate; elytra (♂) three-fifths longer than wide, only very slightly wider behind the middle than at base, with the sides broadly but evidently arcuate, about a third wider than the prothorax, the apex evenly rounded and the intervals between the very deep and punctureless striæ conspicuously convex throughout, or (♀) broader, much wider behind the middle than at base, with the sides diverging from the base for two-thirds and nearly straight, one-half longer than wide, a third wider than the prothorax, the apex very broadly obtuse and the intervals moderately convex, strongly so laterally; male hind tibiæ with a few very broad and

feeble crenules, the tarsi rather long and slender. Length (♂ ♀) 13.0–14.0 mm.; width 5.0–5.7 mm. California (Humboldt Co.). **cuneatulus** n. sp.

15—Head moderately large, distinctly more than half as wide as the prothorax; body only feebly convex, deep black, with blackish-brown legs, shining, the elytra of the female only a little less shining; head with the anterior impressions rather fine, widely separated, the epistoma and labrum sinuato-truncate; antennæ rather stout, extending behind the thoracic base; prothorax nearly a fifth wider than long, the sides feebly rounded, very slightly converging, becoming straight or just visibly sinuate to the angles, which are right to slightly obtuse and rather sharp, the edges fine and even, not at all crenulate; base very broad, feebly sinuate in about median third, margined except medially and only very slightly less than the maximum width; surface feebly convex, the median line sharply impressed, being sharply defined at the bottom of a rather conspicuous impression, the inner of the lateral impressions rather long and moderately deep, the external short, sharply limited externally, the intermediate surface not depressed; elytra oblong, with broadly arcuate sides, a third to fourth wider than the prothorax, one-half longer than wide, evenly and not very obtusely rounded behind, almost similar in the sexes, finely but deeply striate, the striæ not distinctly punctate, the intervals feebly convex, nearly flat suturally; hind tibiæ (♂) finely and feebly serrulate within, the tarsi not quite so long or slender as in the preceding group. Length (♂ ♀) 12.0–14.0 mm.; width 4.5–5.2 mm. California (Lake Tahoe, Big Trees, Placer and Siskiyou Cos.).....**planctus** Lec.

Head nearly similar but rather more elongate and with slightly larger eyes, fully three-fifths as wide as the prothorax, the latter nearly as long as wide, or slightly transverse (♀), the side margins fine and absolutely devoid of crenulation, much more rounded than in the preceding, distinctly converging and broadly, feebly sinuate basally, the angles right, scarcely blunt, the base only very feebly sinuate medially, margined except at the middle and five-sixths the maximum width, the surface evidently convex, as in the preceding, except that the inner of the basal impressions is still larger and the surface thence to the sides convex, with a small feeble and sometimes evanescent impression; elytra more oval, with more arcuate sides, parallel, not obtusely rounded at apex, three-fifths longer than wide, a fourth to nearly a third wider than the prothorax, with rather fine but deeply impressed and impunctate striæ and strongly convex shining intervals throughout in both sexes, barely perceptibly less shining in the female; humeral denticle almost obsolete; tarsi longer and more slender than in *planctus*. Length (♂ ♀) 11.4–13.0 mm.; width 4.2–5.0 mm. Oregon (Clackamas Co.) to Vancouver Island (Victoria). One example is labeled " Kansas, Snow " but almost certainly in error. [*algidus* Lec.].....**validus** Dej.

Head smaller, rather short, but little more than half as wide as the prothorax, the epistoma sinuato-truncate, the labrum rectilinearly; body very shining, blackish-piceous to dark castaneous, small

in size, the antennæ testaceous, rather stout; prothorax moderate, distinctly wider than long, the edge fine and even, the sides rather strongly arcuate, converging and gradually feebly sinuate basally, the angles nearly right, sharply defined; base sinuate medially, margined in outer fourth, five-sixths the maximum width; surface nearly as in the preceding, except that the inner impression is much narrower and feebler and the outer not evident, except occasionally and very obsoletely; elytra oval, rather convex, not quite one-half longer than wide, a fourth wider than the prothorax, with fine but very deeply impressed striæ and rather strongly convex shining intervals in both sexes throughout; humeral denticle distinct, the scutellar stria generally represented by a coarse subbasal puncture. Length (♂♀) 8.6–10.0 mm.; width 3.0–3.7 mm. British Columbia (Metlakatla and Inverness),—Keen.....**castaneus** Dej.

The male sexual characters at the abdominal apex are feeble throughout, except in *serripes*, where there is an abrupt and very strong medial carina at the extreme tip, surrounded by a depression of the surface. A part of the differences noted between *sequoiarum* and *tarsalis* is probably due to the sex of the specimens compared, but by no means all; for example the strong strial punctures of the former, somewhat crenating the sides of the intervals, cannot be accounted for in this way; the striæ in *tarsalis*, in which species the surface is more flattened than in any other known to me, are said to be impunctate, and, under transverse illumination, no vestige of punctuation is to be seen, but when viewed under longitudinally oblique light the punctures become very obvious. I infer that my representatives are properly identified, as they agree with the description in all other features and are from the same local water system. *Amethystinus* and *novellus* are appreciably different when viewed in large series; the female is, on the whole, distinctly smaller than the male and varies more in size, which is decidedly an exception to the general rule. The female differs from the male in a different manner in the various species; in some, such as *cuneatulus*, in the more cuneiform, opaque and less costulate elytra; in others simply in smaller size, while in some, such as *planctus* and *castaneus*, there is very little sexual difference.

Group II—*californicus* Dej.

In this group the prothorax is rather large and convex as a rule, but always distinctly shorter than wide, the linear impressions of the head and pronotum smaller and shallower and the elytral striæ

finer and less impressed than in the preceding, the intervals nearly always flat. The more convex upper surface, only moderately elongate, oval or oblong-oval, finely striate elytra, but little wider and sometimes scarcely at all wider than the prothorax, and the feeble impressions of the pronotum, the outer always small and very feeble and sometimes wanting, impart a very different habitus from the preceding group, and one that is perfectly consistent throughout. An examination of *californicus* and *protractus*, will at once furnish a criterion enabling one to place any species properly in the group. There are seventeen species in my collection, which, as shown by extended series, are unmistakably distinct among themselves, but a peculiar paucity of special structural differences renders a tabular statement of them most difficult and rather unsatisfactory. The group is not so essentially northern as the preceding and also extends further inland; it inhabits the Rocky Mountain regions as far south as New Mexico and the Pacific coast as far as Los Angeles. The following table may aid in identification:

Elytra more elongate, generally nearly three-fourths longer than wide, somewhat shorter in *longulus* and *tahoensis;* body generally more depressed.....2

Elytra less elongate, never more than two-thirds longer than wide and frequently much shorter; body more convex; species confined to the Pacific coast regions.....7

2—Tarsi rather stout; sides of the prothorax arcuately oblique posteriorly to the angles. Body rather elongate, moderately convex, shining, deep black, the margins of the prothorax narrowly and diaphanously obscure testaceous basally; head three-fifths as wide as the prothorax, the impressions moderate, arcuate, widely separated, the epistoma nearly truncate, the labrum sensibly sinuate; prothorax a fourth wider than long, only just visibly narrower than the elytra, the sides rounded, gradually converging and becoming less arcuate to the basal angles, which are obtuse though sharply marked; base transversely truncate, margined slightly near the sides, four-fifths the maximum width, the surface broadly convex, polished, the inner impression moderate, less than a third the total length, the outer slightly elongate and very evident though shallow; anterior angles rounded; elytra a little more than two-thirds longer than wide, parallel, with broadly rounded sides and evenly rounded apex, the surface distinctly alutaceous, the striæ fine, impunctate, the intervals nearly flat; scutellar stria distinct, oblique; humeri denticulate; hind tibiæ (♂) distinctly crenulate within, the tarsi black, the fourth joint cordiform, barely one-half longer than wide. Length (♂) 16.0 mm.; width 5.6 mm. Wyoming (Yellowstone Park),—Wirt Robinson.....**fontinalis** n. sp.

Tarsi more slender as a rule; sides of the prothorax sensibly sinuate toward the hind angles.....3

3—Prothorax scarcely visibly narrower than the elytra, at first sight not at all narrower.....4

Prothorax very evidently narrower than the elytra.....5

4—Form rather stout, subparallel, moderately convex, shining, deep black, the elytra evidently and equally alutaceous in both sexes; head not quite three-fifths as wide as the prothorax, nearly as in the preceding, except that the epistoma is sinuato-truncate and the labrum even more sinuate medially; prothorax larger and wider than in any other of the group, similar in the sexes and a fifth to fourth wider than long, the sides arcuate, rather strongly converging posteriorly, becoming very feebly sinuate near the angles, which are obtuse but sharp and even a little prominent; base transversely truncate, three-fourths the maximum width, the surface nearly as in the preceding, the outer impression distinct but shallow; elytra oblong, with parallel and very feebly arcuate sides and evenly rounded apex, rather more than two-thirds longer than wide, the impunctate striæ moderately fine but somewhat deep, the intervals nearly flat; humeri and scutellar stria as in the preceding; hind tibiæ (♂) with rather shorter and sharper inner crenulation, the tarsi not more slender and virtually similar. Length (♂ ♀) 15.0–16.2 mm., width 5.6–5.8 mm. New Mexico.....**zunianus** n. sp.

Form slender, rather more depressed, much smaller in size, subparallel, piceous-black and frequently paler, rather shining throughout, the elytra not sensibly opaculate; head moderate, nearly as in the preceding but with relatively narrower epistoma and labrum, the eyes similarly well developed and convex; prothorax a fourth wider than long, the sides rather strongly arcuate, converging and only a little less arcuate posteriorly to near the angles, where they become just visibly sinuate for a short distance, the angles obtuse but sharp and minutely, feebly prominent; surface slightly convex, the inner impression distinct and fully a third of the total length, the outer obsolete; base feebly sinuate medially, margined near the sides, fully three-fourths the maximum width; elytra barely more than three-fifths longer than wide, subequal in width to the prothorax, parallel, with broadly arcuate sides and rounded apex; striæ fine, impunctate, rather deep, the intervals very slightly convex; legs rather short, the hind tibiæ (♂) feebly crenulate internally, the tarsi rather slender but with the first joint shorter than the next two combined. Length (♂ ♀) 9.5–11.2 mm.; width 3.2–3.9 mm. Colorado (Boulder Co., Leadville and Eldora) and Montana. Abundant.....**longulus** Lec.

5—Sides of the prothorax only broadly and feebly sinuate toward the hind angles, which are obtuse though rather sharply defined and sometimes feebly and minutely prominent. Body rather narrow and elongate, only feebly convex, shining, the elytra alutaceous; color black, though not very intense and frequently rufescent; head nearly three-fifths as wide as the prothorax, almost as in the preceding; prothorax between a fourth and fifth wider than long, the sides

moderately rounded anteriorly, converging, becoming feebly sinuate posteriorly; base transversely truncate, four-fifths the maximum width, margined laterally; surface rather depressed, very feebly convex, the latero-basal impressions both distinct but unusually feeble, the surface between them feebly depressed and generally somewhat alutaceous; elytra three-fourths longer than wide, broadly rounded at tip, about a fifth wider than the prothorax, the sides broadly and feebly arcuate; striæ fine, simple, not very deep, the intervals nearly flat; hind tibiæ (♂) with a few small and unusually widely separated feeble crenules internally, the tarsi rather long, the first joint as long as the next two. Length (♂ ♀) 14.0–16.0 mm.; width 4.7–5.2 mm. Colorado (Boulder Co., and with unrecorded locality), Wyoming and Montana (Mullan—the type above described); also one with slightly more obtuse basal angles labeled "California" in the Levette collection—probably erroneously. Jasper House (British America)—LeConte, the original locality. Abundant. [*inornatus* Bland]..... **protractus** Lec.

Sides of the prothorax more strongly sinuate posteriorly, becoming straight and nearly parallel for a rather long distance before the angles, which are sharply defined and generally right.....6

6—Form moderately slender, slightly convex, shining, the elytra only very faintly alutaceous, black but sometimes pallid; head a little larger than in the preceding, nearly three-fourths as wide as the prothorax, the impressions distinct; epistoma and labrum feebly sinuate; prothorax a fifth to fourth wider than long, the sides broadly rounded except basally, the base truncate, four-fifths the maximum width, the surface and impressions nearly as in the preceding; elytra elongate-oval, three-fourths longer than wide, a fourth to nearly a third wider than the prothorax, the sides more arcuate than in *protractus*, less obtusely rounded at tip, the striæ and intervals nearly similar; hind tibiæ (♂) feebly serrulate internally, the tarsi nearly similar, the basal joint not quite so long as the next two combined. Length (♂ ♀) 14.5–15.8 mm.; width 5.0–5.8 mm. California (Placer and Siskiyou Cos.)..... **parens** n. sp.

Form much more slender, feebly convex, piceous-black, not very shining, the elytra opaque; head well developed, the anterior impressions slender, feeble and linear; prothorax rather depressed, only about a sixth or seventh wider than long, the sides feebly arcuate, feebly converging to the pronounced but broad basal sinus, the base transverse, nearly five-sixths the maximum width; surface feebly depressed toward the hind angles, the inner impression narrow and feeble, scarcely attaining the base, the outer defined only by a slight swelling parallel with the straight parallel part of the sides; elytra fully three-fourths longer than wide, elongate-oval, with arcuate sides and strongly rounded apex, fully a third wider than the prothorax, the striæ very fine, impunctate, the intervals flat; scutellar stria short but distinct, oblique, the humeral denticle minute and feeble; basal joint of the hind tarsi nearly as long as the next two. Length (♀) 13.0 mm.; width 4.7 mm. California (Siskiyou Co.)..... **occultus** n. sp.

Form nearly as in the preceding but evidently shorter, feebly convex, moderately shining, dark rufo-piceous, the elytra black and opaculate, barely less so in the male; head almost three-fourths as wide as the prothorax, the impressions fine, arcuate and diverging, separated by rather less than twice that of either from the sides; prothorax throughout as in the preceding, except that the sides before the basal angles are not so parallel or straight, the sharp angles being evidently obtuse and not right; elytra as in *occultus* but broader, more oblong-oval and much shorter, this species belonging to the preceding section in general habitus but to the succeeding in the less elongate elytra, three-fifths to two-thirds longer than wide and about a fourth wider than the prothorax; sides parallel, very feebly arcuate, more rounding at base, moderately obtuse at apex, the striæ very fine, impunctate, the intervals flat; legs moderately long and slender, they as well as the entire under surface castaneous. Length (♂♀) 12.8–13.5 mm.; width 4.4–4.9 mm. California (Lake Tahoe) . . . . . **tahoensis** n. sp.

7—Hind angles of the prothorax sharply marked, generally minutely and feebly, denticularly subprominent; body rather deep black in color throughout except in the aberrant *miscellus* 8

Hind angles very obtuse, never prominent, sometimes rounded. Southern California coast regions 15

8—Prothorax only a little though evidently, as a rule, narrower than the elytra 9

Prothorax much narrower than the elytra in both sexes 13

9—Size larger, the upper surface strongly convex, deep, shining black, the elytra but just visibly alutaceous; head moderate, the impressions rather feeble, the epistoma and labrum rather strongly sinuate from side to side; prothorax notably large, a fourth or fifth wider than long, rather strongly rounded at the sides almost throughout but more converging posteriorly, only just visibly sinuate near the angles, which are obtuse though rather sharp; base very feebly sinuate in median third, thence transverse and margined to the angles; surface unusually convex and declivous laterally, very finely margined throughout, the inner impression rather long, moderately impressed, not attaining the base, the outer obsolete or very nearly, the intermediate surface convex; elytra oblong-oval, convex, with arcuate sides and rounded apex, one-half longer than wide, only a fifth to sixth wider than the prothorax, the striæ very fine, shallow, minutely punctulate along the bottom, the intervals flat; hind tibiæ (♂) feebly crenulate within except basally, the tarsi rather stout but with the first joint somewhat longer than the next two. Length (♂♀) 12.0–14.5 mm.; width 4.35–5.5 mm. California (vicinity of San Francisco Bay to Humboldt Co.). Very abundant. [*amplicollis* Mots.; *simplex* Lec.] . . . . . **californicus** Dej.

Size nearly as in *californicus*, the body less convex and more oblong, deep black, shining, the elytra not distinctly alutaceous in the male—the only sex at hand;—head moderate, barely three-fifths as wide as the prothorax, the impressions and labrum nearly as in the preceding,

the latter narrower; prothorax differing greatly in form, more transverse, over a fourth wider than long, the sides much less broadly rounded, converging posteriorly in about basal half, becoming slightly sinuate near the angles, which are very briefly right but not prominent; base similar; surface less convex, the median sulcus coarser and deeper, the inner impression rather feeble and short, coming far from attaining the base, the outer slightly elongate, basal, near the sides and bounded externally by a pronounced slope, the intermediate surface slightly depressed posteriorly; side margins similarly very fine; elytra more oblong, fully three-fifths longer than wide, not distinctly wider than the prothorax, the sides broadly and more feebly arcuate, the apex similarly rounded, the striæ very fine, scarcely modified, the intervals flat; humeral denticle obsolete, the scutellar stria long; tarsi rather long and slender. Length (♂) 14.0 mm.; width 5.0 mm. California (Hoopa Valley, Humboldt Co.).....**cupidus** n. sp.

Size smaller, less convex and more distinctly striate than in *californicus*. 10

10—Color deep black, prothorax only slightly wider than long.....11

Color rufo-piceous, the head and prothorax frequently dark testaceous, the latter much shorter and more transverse, a fourth to nearly a third wider than long.....12

11—Form moderately stout, rather shining, the elytra very slightly alutaceous; head moderate, the impressions fine, feeble, oblique, the epistoma and labrum feebly sinuato-truncate; prothorax much more depressed than in the preceding, the sides rounded from apex to base, more converging posteriorly, not sinuate near the basal angles, which are minutely and denticularly prominent; sides much more broadly grooved and reflexed than in *californicus;* inner impression long and rather strong, the outer obsolete and surface convex to the sides; base broadly sinuate in median three-fifths only, margined thence to the sides, four-fifths the maximum width; elytra one-half longer than wide to a little longer, oval, with broadly arcuate sides and rounded apex, a fourth to fifth wider than the prothorax, rather convex, the striæ fine but deeply impressed, impunctate, the intervals feebly convex, rather strongly laterad; humeral denticle obsolete. Length (♂♀) 10.7–12.7 mm.; width 3.7–4.5 mm. California (Humboldt Co.). Abundant.....**humboldti** n. sp.

Form rather slender, similar in sculpture and lustre, the elytra narrower and less convex; head nearly similar, the labrum more sinuate; prothorax nearly similar but less reflexed at the sides, the latter with the converging sides posteriorly differing in becoming gradually broadly, though only just visibly, sinuate toward the angles, which are similarly sharply marked; surface with the inner impressions shorter and much feebler, the outer sometimes evident as a minute feeble indentation, the intermediate surface not so convex as in *humboldti;* base similar but more truncate; elytra more elongate, three-fifths longer than wide and barely a sixth wider than the prothorax, oval, with feebly arcuate sides and rather strongly rounded apex, the striæ finer and much more shallow than in the preceding, mpunctate, the intervals very flat throughout; legs

moderate. Length (♂♀) 10.7–13.0 mm.; width 3.4–4.5 mm. California (Humboldt Co. to Monterey). Very abundant about San Francisco Bay.....**vicinus** Mann.

12—Lustre shining, the elytra alutaceous and generally darker than the anterior parts, the legs and under surface dark testaceous; head nearly as in the preceding species; prothorax strongly rounded at the sides, the latter becoming rather rapidly and strongly convergent basally and almost straight, not in the least sinuate toward the angles, which are minutely, denticularly prominent; base broadly sinuate, except laterally, where the margin is fine, only a little more than three-fourths the maximum width; surface moderately convex and margined laterally, the inner concavity in the form of a broad and very shallow impression, not at all sharp along the bottom, thence to the sides flat, the outer obsolete; elytra decidedly short, a little less than one-half longer than wide, just visibly (♂) to fully a third (♀) wider than the prothorax—the female much smaller and less parallel than the male,—oblong-oval, with broadly arcuate sides and obtusely rounded apex; striæ very fine, impunctate, feebly impressed, the intervals nearly flat, feebly convex laterad; legs rather short, the hind tibiæ (♂) very feebly and obtusely crenulate within, the tarsi rather stout, with the first joint nearly as long as the next two. Length (♂♀) 8.8–11.7 mm.; width 3.2–4.3 mm. California (Sta. Barbara,—Dunn and also from an unrecorded locality in the Levette collection). Abundant.....**miscellus** n. sp.

13—Elytral striæ fine and impunctate but deep, the intervals broadly convex, rather strongly so laterad. Body in the female stouter than any other of this group, the male much less stout, shining, the elytra (♂) rather shining, only feebly alutaceous, or (♀) opaque and with the micro-reticulation stronger; head moderate, nearly as in *vicinus;* antennæ pale, the four basal joints piceous; prothorax a fourth wider than long, strongly rounded at the sides almost throughout the length, rapidly converging basally and very briefly and feebly sinuate at the slightly prominent angles; surface nearly as in *humboldti;* elytra oblong-oval, a little more than one-half longer than wide, with broadly arcuate sides and evenly rounded and not very obtuse apex, more than a fourth wider than the prothorax, two-fifths (♀), the striæ fine but deeply groove-like, impunctate, the humeral denticle subobsolete; hind tarsi rather slender. Length (♂♀) 13.0–14.3 mm.; width 4.6–5.3 mm. California (Humboldt Co.) and southern Oregon. Six males and nine females. **bucolicus** n. sp.

Elytral striæ very fine, impunctate and not deep, nearly as in *vicinus*. . 14

14—Moderately slender, rather convex, shining, deep black, the elytra subopaque in both sexes; head moderate, the linear impressions rather deep but fine, the antennæ pale, gradually piceous basally; prothorax only moderately convex, the sides broadly rounded, gradually feebly converging toward base and broadly, just visibly sinuate, the angles very slightly and obtusely prominent; base five-sixths the maximum width, rectilinearly truncate, margined laterad; surface with moderate inner impressions, the surface externally thereto

feebly convex, the outer impression small and extremely faint; elytra two-thirds longer than wide, nearly a third to two-fifths wider than the prothorax, the sides distinctly and broadly arcuate, the apex strongly rounded; striæ fine, the intervals broad and flat; tarsi rather long, the basal joint of the posterior as long as the next two. Length (♂♀) 13.8–15.0 mm.; width 4.9–5.4 mm. California (North Fork, Madera Co.);—also two examples with label "Cal." in the Levette collection. Seven examples.....**ordinarius** n. sp.

Moderately stout and convex, shining, piceous-black, the elytra deep black and alutaceous; head large, three-fourths as wide as the prothorax, the impressions rather deep and closer than in any other of this group, being separated by a third more than either from the sides, the epistoma and labrum broadly sinuate; antennæ castaneous, piceous basally; prothorax nearly a third wider than long, the sides strongly rounded, converging but barely at all sinuate basally, the angles obtuse but sharp though not at all prominent; base transverse, four-fifths the maximum width; surface with numerous feeble wavy transverse lines, the inner impression obtusely rather deep, obsolete before the base, the outer elongate, evident but feeble; elytra two-thirds longer than wide, oblong-oval, rounded at tip, a third or more wider than the prothorax; intervals flat, feebly convex near the sides, the striæ fine; hind tarsi rather slender. Length (♂♀) 13.0–14.5 mm.; width 5.0–5.4 mm. California (Lake Tahoe). Four examples.....**laborans** n. sp.

15—Form elongate, moderately convex, deep black, shining, the elytra (♂) shining and only faintly, or (♀) less shining and strongly, alutaceous; head moderate, the impressions rather strong, lineiform, diverging; antennæ piceous, paler near the tip; prothorax a fifth wider than long, rather strongly rounded at the sides from apex to base, the sides more converging basally and straight, the angles very obtuse, bluntly rounded; base somewhat arcuate, sometimes with a faint median sinuation, margined only near the sides, about three-fourths the maximum width; surface broadly convex, the inner impression long, deep and conspicuous, the surface externally thereto convex, unimpressed; lateral margins unusually broadly concave and reflexed; elytra oblong-oval, rather flattened suturally, two-thirds longer than wide, strongly rounded at apex, only about a fifth wider than the prothorax, the striæ very fine and shallow, impunctate, the intervals flat; hind tarsi rather long and slender. Length (♂♀) 12.5–14.5 mm.; width 4.8–5.0 mm. California (Sta. Barbara),—Dunn. Seven examples.....**barbarinus** n. sp.

Form elongate, suboval, rather convex, polished, piceo-rufous throughout, the elytra barely at all alutaceous in either sex; head moderate, the impressions fine, diverging, the epistomal apex and labrum unusually narrow, feebly sinuate; antennæ pale, with the nude first three joints darker and rufous; prothorax fully a fourth wider than long, strongly rounded at the sides, which become strongly convergent posteriorly and barely straight near the angles, which are very obtuse though distinct, not rounded but not in the least prominent; base relatively narrower than in any other of the group, feebly sinuate medially,

two-thirds the maximum width; surface rather convex, only finely reflexed at the sides, the inner impression small, feeble, linear, a fourth the total length, the surface exterior thereto as convex as any other part of the sides and completely devoid of impression; elytra scarcely one-half longer than wide, oval, with arcuate sides and rather strongly rounded apex, scarcely visibly wider than the prothorax, the striæ extremely fine and feeble, impunctate, the intervals flat; hind tarsi rather slender but shorter than usual. Length (♂♀) 10.0–11.2 mm.; width 3.4–3.7 mm. California (Los Angeles Co.).....**inermis** Fall

The three species *vicinus*, *humboldti* and *bucolicus* are mutually rather closely allied but abundantly distinct; they increase in size and stoutness, also in the depth of the elytral striæ and convexity of the intervals, in the order named; in the first and last the male is notably smaller and more slender than the female as a rule, but in *humboldti*, the only two females in twelve exponents of the species are scarcely as large as the average of the males, conforming more nearly to a frequently observed condition in this part of the series. The large series of most of the species confirm their mutual distinctness even at a casual glance.

Group III—*menetriesi* Mots.

As the groups here proposed are based principally on habitus, it seems proper to give the large and strikingly distinct *menetriesi* a group to itself, allied closely to the preceding group but distinguished from any of its species by the large size, convex and opaque upper surface, almost obsolete thoracic impressions and excessively fine, minutely and remotely punctulate striæ, the elytra being notably oval and convex. The two examples in my collection were taken at Monterey and measure 18–20 by 7–8.7 mm.

Group IV—*congestus* Ménét.

Although really nothing more than an extension of the *californicus* group, that founded upon such species as *congestus* and *castanipes*, presents an appreciably different habitus due to the more elongate form, more convex surface, regularly elongate-elliptical elytra and more elongate prothorax, there being but few species in which this somite becomes shorter than wide. The group is on the whole more southern in range and does not seem to spread beyond the confines of California, the neighboring islands and perhaps the adjacent

parts of Arizona. There are before me some fifteen species, of which only three have been hitherto described. They may be known as follows, presenting rather more structural diversity than those of the *californicus* group:

Larger species, generally not less than 15 mm. in length and confined to the fauna of southern California and neighboring regions.....2

Smaller species, usually under 15 mm. in length, not occurring in the regions cited.....7

2—Prothorax very distinctly shorter than wide.....3

Prothorax about as long as wide.....4

3—Elongate, rather convex, deep black, shining, the elytra moderately and subequally alutaceous in both sexes; head three-fifths as wide as the prothorax, the impressions deep, arcuate, widely separated and diverging; mandibles entirely black; antennæ pale brown, the first three joints piceous; prothorax fully a fourth wider than long, the sides rounded, rather rapidly converging behind about the middle, becoming oblique and very broadly, feebly sinuate posteriorly, the angles very obtuse and somewhat rounded; base not quite three-fourths the maximum width; surface strongly reflexed at the sides, impressed toward the basal angles, the inner impression moderately long, rather deep, the outer obsolete; anterior angles notably rounded; elytra oval, two-thirds longer than wide, nearly a third wider than the prothorax, with fine, slightly impressed, impunctate striæ and nearly flat intervals, becoming feebly convex laterad; humeral denticle almost obsolete, the scutellar stria short but evident, oblique, not approaching the first stria; tarsi moderately long, rather stout. Length (♂♀) 15.0–17.0 mm.; width 5.7–6.2 mm. California (Los Angeles). One example marked "Arizona," but perhaps erroneously.....**isabellæ** Lec.

Elongate but not so decidedly as in the preceding and more ventricose, the type castaneous-brown throughout though exhibiting no other evidences of immaturity, the lustre as in *isabellæ;* head nearly similar but with finer and more linear impressions, the mandibles black, rufous basally; prothorax a fifth wider than long, similar in form, except that the sides posteriorly are much more sinuate, becoming gradually almost parallel at the basal angles, which are only a little more than right though slightly blunt; side margins similarly strongly reflexed, the apical angles however much more acute, only very narrowly rounded; surface nearly similar, except that the outer of the basal impressions is evident because of an elongate basal convexity near the sides; base three-fourths the maximum width; elytra rather broadly oval, very convex, three-fifths longer than wide, fully two-fifths wider than the prothorax, otherwise similar, except that the scutellar stria is longer, joining the first stria; female with four anal setæ, the inner pair double as is sometimes the case in *isabellæ.* Length (♀) 16.5 mm.; width 6.1 mm. California (San Diego). **jacobinus** n. sp.

4—Sides of the prothorax oblique posteriorly, becoming only feebly sinuate toward the angles, which are obtuse and blunt.....5

Sides strongly sinuate, becoming straight and almost parallel for a long distance before the angles, which are right though similarly blunt..6

5—Form elongate though moderately broad and convex, deep black, shining, the elytra less shining and alutaceous, almost similarly in the sexes, which are almost completely similar otherwise as well; head rather large, almost three-fourths as wide as the prothorax, the impressions rather broadly concave, the epistoma and labrum rather broad, evenly sinuate from side to side; prothorax not quite as long as wide, the sides rounded, rather strongly converging behind about the middle, becoming scarcely less than straight, the angles very obtuse and distinctly rounded; base about two-thirds the maximum width; surface rather strongly reflexed at the sides, the inner impression long and distinct, the surface thence to the sides convex, the outer impression obsolete; anterior angles moderately broadly rounded; elytra nearly three-fourths longer than wide, evenly oval, moderately convex, two-fifths wider than the prothorax, the sides almost evenly rounding to the basal ridge, the denticle completely obsolete; striæ rather fine but deep, impunctate, the intervals nearly flat, feebly convex laterad, the scutellar stria rather long, the first stria broadly interrupted near the base; hind tibiæ (♂) strongly crenulate internally, the tarsi rather long. Length (♂♀) 17.5–18.0 mm.; width 6.3–6.7 mm. California (San Clemente Island). Five remarkably uniform examples.....**gliscans** n. sp.

Form very elongate and notably narrow, rather strongly convex, black, moderately shining, the elytra decidedly opaque; head fully two-thirds as wide as the prothorax, the impressions distinct, unusually widely separated, the epistoma strongly, the labrum feebly, sinuate; prothorax nearly as long as wide, formed almost as in the preceding, except that it is relatively smaller in size, with the oblique sides posteriorly broadly but sensibly sinuate, the angles a little less obtuse and but slightly blunt; surface rather strongly reflexed at the sides, more gradually sloping toward the apical angles, which are similarly moderately rounded, the basal impressions similar but with the surface thence to the sides flatter, the outer impression obsolete; base nearly three-fourths the maximum width; elytra very elongate, evenly oval, almost four-fifths longer than wide; striæ fine but rather deep, finely punctate, very distinctly toward the sides, the intervals nearly flat, sensibly convex laterad; humeral denticle distinct, the scutellar stria rather long, oblique, the first not interrupted; tarsi moderate. Length (♀) 16.5 mm.; width 5.8 mm. California (between Indio and Colton),—Dunn.....**ovalipennis** n. sp.

6—Body rather stout and convex, black, moderately shining, the elytra strongly alutaceous; head moderate, the impressions separated as usual, deep and distinct, nearly parallel; prothorax much larger than in either of the preceding, about as long as wide, the sides broadly rounded, becoming evidently converging only well behind the middle, the sinuation rather abrupt; angles right, rather sharp; base nearly four-fifths the maximum width; surface not very convex, sloping gradually to the abruptly and strongly reflexed marginal bead, the inner impression rather small, somewhat sharply defined,

the outer wanting, the intervening surface flat; elytra oblong-oval, strongly convex, only about three-fifths longer than wide and a third wider than the prothorax; sides parallel, feebly arcuate to the distinct humeral denticle, the lateral margins unusually broadly concave and reflexed; striæ fine but cleft-like, slightly but unevenly punctulate, the intervals flat; male with the, in some form frequently observed, feeble transverse division of the last abdominal segment near the apex, the under surface throughout very polished; tarsi rather long. Length (♂ ♀) 15.5–16.2 mm.; width 5.4–6.1 mm. California (Sta. Barbara),—Dunn. . . . . **canallatus** n. sp.

Body rather more elongate, very convex, deep and rather opaque black; head smaller than in the preceding, not three-fifths as wide as the prothorax, the impressions deep and conspicuous, subparallel; prothorax as long as wide, formed throughout nearly as in the preceding, except that the surface is more steeply declivous toward the side margins, which are more concave along the reflexed beading, and that the inner impression is very feeble and diffuse; elytra more elongate and more oval, very convex, a third to two-fifths wider than the prothorax, the sides more arcuate, the apex broadly rounded, a little more than one-half to three-fifths longer than wide, the sides moderately widely concave and reflexed, the humeral denticle strong; striæ rather fine but unusually impressed, evidently crenulo-punctulate toward the sides, the intervals very convex, more feebly suturad; legs moderate; prosternal process not margined laterally but truncate and moderately margined at apex as usual in related species. Length (♂ ♀) 15.0–17.5 mm.; width 5.6–6.6 mm. California (Los Angeles and near Colton). [*illustris* Lec.]

congestus Mén.

7—Elytra shorter, the prothorax larger, only very slightly narrower than the elytra; lustre more shining. Body subparallel, moderately convex, polished, black with piceous tinge, the elytra not alutaceous in the male; under surface and legs rufo-piceous, the latter testaceous distally; head moderate, nearly two-thirds as wide as the prothorax, the impressions fine, arcuate and diverging; prothorax about as long as wide, the sides rounded almost to the base, where they become feebly and briefly sinuate just before the angles, which are nearly right but rather blunt; base distinctly sinuate in about median third, thence margined to the sides, almost four-fifths the maximum width; surface convex, steeply declivous to the fine elevated marginal bead throughout, the inner impression moderately long and deep, the surface thence flattened near the base to a very small and feeble basal elevation near the angle; median stria fine but distinct; elytra three-fourths longer than wide, oblong-oval, with feebly arcuate sides and very feeble humeral denticle, strongly rounded at apex, the striæ impunctate, the intervals rather strongly convex throughout; scutellar stria long, forming the basal part of the first stria very evenly and without trace of junction, the base of the latter detached; legs moderately short. Length (♂) 13.7 mm.; width 4.5 mm. California (Mt. Diablo). . . . . **diabolus** n. sp.

Elytra more elongate, more broadly oval in *panticulatus;* prothorax

always much narrower than the elytra; lustre more or less shining but with the elytra always alutaceous or opaque.....8

8—Prothorax fully as wide as long, more strongly rounded at the sides..9

Prothorax apparently longer than wide, more broadly rounded at the sides and more gradually narrowed posteriorly, except in *esuriens*, where it is even more abruptly constricted at base than in *castanipes*. 10

9—Size larger, black, shining, the legs castaneous-red; elytra barely at all alutaceous (♂) or distinctly so (♀); head very moderate, less than three-fifths as wide as the prothorax, the impressions rather fine and shallow, straight and feebly diverging, the epistoma and labrum evidently sinuate; antennæ very slender on the narrow side; prothorax with almost evenly rounded sides to near basal sixth, there rather abruptly sinuate to the angles, which are sharp but obtuse owing to an adjacent arcuation of the base, the latter very broadly and feebly sinuate, only just visibly margined and very near the sides, fully three-fourths the maximum width; surface convexly steep to the narrowly reflexed marginal bead, the gutter a little wider anteriorly, obsolete near the basal angles, the inner depression rather broadly but moderately impressed, the outer obsolete; apical angles rounded; median stria fine, far from attaining base or apex; elytra oval, two-thirds to three-fourths longer than wide, a third to nearly two-fifths wider than the prothorax, the striæ rather fine, impunctate, deeply impressed (♂) or very feebly (♀), the intervals respectively distinctly convex or nearly flat; scutellar stria short but evident, oblique; legs rather long. Length (♂♀), 12.8–14.8 mm.; width 4.3–5.7 mm. California (vicinity of San Francisco Bay). Very abundant. [*contractus* Lec.].....**castanipes** Mén.

Size much smaller, more slender, nearly similar in coloration and lustre but with the elytra almost similarly and only feebly alutaceous in both sexes; head similar but with the impressions shorter, feebler, more arcuate and more divergent, parallel in anterior half of their length; prothorax nearly similar throughout but with the base more narrowly subsinuate medially; elytra narrower though not quite so elongate, oval, convex, a fourth to nearly a third wider than the prothorax, the striæ rather fine, impunctate, feebly impressed, only slightly more so in the male, the intervals nearly flat in both sexes, the reflexed lateral margins much narrower than in *castanipes*, the scutellar stria very much longer, uniting with and forming part of the first stria as a rule, the basal part of the latter in most examples wholly detached; legs shorter, the femora notably more slender. Length (♂♀) 10.8–13.0 mm.; width 4.0–4.75 mm. California (Humboldt Co.). Abundant.....**gregalis** n. sp.

10—Body elongate, frequently almost subcylindrical, the elytra not at all dilated.....11

Body less elongate, ventricose, the elytra rather broadly oval.....15

11—Elytral margin broadly reflexed and concave, the surface very gradually declivous and flat toward the base and humeri. Form rather narrow, deep black, the legs and tarsi also black; surface moderately shining, the elytra dull; head rather long, four-sevenths

as wide as the prothorax, the impressions moderate, arcuate; antennæ piceous, paler apically; prothorax apparently distinctly longer than wide, the sides broadly and very moderately arcuate, gradually converging and very broadly, feebly sinuate behind to the perfectly right and very sharply defined angles; base broadly, very feebly sinuate medially, scarcely at all margined even at the extreme sides, three-fourths the maximum width; surface moderately convex and reflexed at the sides, the inner depression broadly, feebly impressed, not at all sharply defined, the outer wanting though with a minute and feeble ridge extending obliquely inward from each angle; median stria strong; elytra three-fourths longer than wide, oblong, with broadly and feebly arcuate sides and strongly rounded apex, only a little less than one-half wider than the prothorax, the striæ fine but abruptly deep, not punctate, the intervals almost perfectly flat even at the sides; scutellar stria short, fine, oblique; last ventral (♂) with a fine transverse crease* near the tip, having a single anal seta at each side. Length (♂) 13.5 mm.; width 4.8 mm. California. A single example without more definite indication of locality, from the Levette collection.....**annosus** n. sp.

Elytral margin narrowly reflexed, the surface rapidly declivous toward the humeri as usual, the striæ more impressed, the intervals always at least feebly convex laterad.....12

12—Elytra subcylindric, very convex, the body conspicuously narrow and elongate. Color deep black, the legs black, the tarsi rufo-piceous; surface strongly shining, the elytra only faintly alutaceous even in the female; head moderate though nearly three-fourths as wide as the prothorax, the impressions short and deep; prothorax nearly as in *castanipes* though very much narrower, apparently a little longer than wide, the sides broadly rounded to about basal seventh or eighth, there rather abruptly becoming almost parallel to the angles, which are but little more than right, due to a basal arcuation, and sharply defined; base transversely subarcuate, sometimes with a small feeble median sinuation, not quite three-fourths the maximum width; surface convex, finely margined, the inner depression very short, broadly impressed, only about a fifth the total length, the outer wholly obsolete; median stria strong, subentire; elytra almost four-fifths longer than wide, very steeply and deeply convexo-declivous at the sides, becoming nearly vertical toward the extremely and unusually narrowly reflexed margins, parallel, the sides only very feebly arcuate, about a third wider than the prothorax, the apex strongly, rather narrowly rounded; striæ fine but very deep, smooth and punctureless, the intervals nearly flat, becoming feebly convex laterad; humeral denticle small though rather distinct; legs moderately short and slender. Length (♀) 12.0–13.0 mm.; width 4.1–4.65 mm. California (Mendocino Co.—Hermitage and Guallala)...**esuriens** n. sp.

Elytra elongate-oval, less convex and less deeply or vertically declivous at the sides; body not so narrow or subcylindric, the prothorax

*A fine impressed transverse and subarcuate line, apparently dividing the last abdominal segment in *Pterostichus*, is frequently evident but I am unable to determine its origin or significance.

more notably narrower than the elytra and not abruptly constricted at base as it is in *esuriens*.....13

13—Side margins of the elytra very narrowly reflexed; body small in size. Form rather narrow, moderately convex, shining, the elytra only just visibly alutaceous even in the female, black with a piceous tinge, the under surface slightly, and legs more pallidly, rufous; head moderate, the impressions rather short, parallel and deep; prothorax apparently longer than wide, the sides broadly, very moderately arcuate, becoming gradually convergent and broadly, feebly sinuate posteriorly to the angles, which are slightly obtuse though sharply defined; base transverse, not sinuate, faintly margined only at the sides, three-fourths the maximum width; surface moderately convex, only finely reflexo-marginate at the sides, a little less finely toward the obtusely rounded apical angles, the inner depression deep though broadly impressed and not sharply marked, about a fifth the total length and gradually turning outward posteriorly to the hind margin near the angles, the latter marked on the surface by a minute oblique elevation; median stria rather fine, not entire; elytra subevenly oval, rather acutely rounded at apex, three-fourths longer than wide, two-fifths wider than the prothorax, the striæ rather fine but deep, smooth and punctureless, the intervals nearly flat, feebly convex laterad; legs moderate, the tarsi unusually slender. Length (♀) 11.5 mm.; width 4.0 mm. California (Humboldt Co.—Hydesville, Valley of Eel River).....**lacertus** n. sp.

Side margins distinctly though moderately reflexed, as usual throughout this special group.....14

14—Elytral striæ impunctate as usual. Body rather small in size, black, shining, the elytra evidently alutaceous, the under surface and legs black or blackish; head moderate, the impressions nearly as in *lacertus;* prothorax apparently just longer than wide, the sides broadly and moderately rounded, gradually converging posteriorly but becoming just visibly sinuate only near the angles, which are abruptly rather acute and laterally prominent; base three-fourths the maximum width; surface unusually broadly grooved and reflexed along the sides, the inner impression fully a fourth the total length, rather broadly concave, though somewhat sharply defined along the bottom, nearly straight, not curving outward basally, the surface thence to the sides feebly convex, the outer impression obsolete; median stria fine but deep, subentire; elytra elongate-oval, the sides unusually evenly arcuate from the humeri almost to the narrowly rounded apex, more than three-fourths longer than wide, fully two-fifths wider than the prothorax; surface strongly but almost evenly convex, the striæ rather fine but very deep, the intervals just visibly convex inwardly but distinctly so and more alutaceous laterad; scutellar stria very short, oblique; legs moderately short and slender. Length (♀) 12.0 mm.; width 4.2 mm. California (Monterey),—Dunn.....**sponsor** n. sp.

Elytral striæ more or less evidently punctulate, at least laterally, the size materially larger, the elytra more parallel. Body elongate, moderately convex, rather narrow and more parallel, the female

slightly more ventricose than the male, shining, black, the legs rufo-piceous, the elytra only a little less shining in either sex; head moderate, the impressions rather deep and broadly concave, diverging; prothorax apparently a little longer than wide, the sides broadly arcuate, gradually and moderately converging posteriorly, becoming very feebly and rather broadly sinuate toward the angles, which are but slightly obtuse, sharply marked and subprominent; base very feebly sinuate, becoming feebly arcuate near the sides, scarcely more than two-thirds the maximum width; surface very moderately convex, rather finely reflexed at the sides, a little less finely anteriorly, the stria moderate, not quite entire; the inner impression broad and feeble, not extending to the base; surface thence to the angles flattened; elytra long, parallel, three-fifths to three-fourths longer than wide, two-fifths wider than the prothorax or more, the sides broadly arcuate, rounding a little more basally, the apex subacutely rounded; striæ fine but rather deeply impressed, finely, obscurely punctulate, sometimes rather distinctly so laterally, the intervals feebly convex, rather strongly laterad, a little more strongly throughout in the male than in the female; scutellar stria moderate to short; legs rather slender. Length (♂♀) 14.0–14.5 mm.; width 4.7–5.4 mm. California (Lake Tahoe and Merced Cr.; also from an unrecorded locality) ..... **sierranus** n. sp.

15—Form more ventricose and more convex, coloration similar, moderately shining, the elytra more strongly alutaceous; head rather small though nearly two-thirds as wide as the prothorax, the impressions fine, sharply defined, straight and diverging, the labrum sinuato-truncate; prothorax relatively smaller than in any other of the group, evidently longer than wide, the sides rather strongly rounded, converging posteriorly and becoming broadly but strongly sinuate basally, almost parallel for a considerable distance before the angles, which are right and sharply marked; base transverse, three-fourths the maximum width; surface only feebly convex, rather abruptly, deeply and narrowly concave and reflexed at the sides, less finely anteriorly, the anterior angles unusually acute, only very narrowly rounded at their tips; stria strong and subentire; inner impression feeble, very broadly concave, the outer obsolete; base almost completely unmargined; elytra oval, with somewhat strongly arcuate sides throughout, rather sharply rounded at apex, three-fourths longer than wide, about one-half wider than the prothorax, the striæ rather fine, feebly impressed, wholly impunctate, the intervals very feebly convex throughout, except apically, where they are rather strongly convex; scutellar stria long; legs rather long and slender. Length (♀) 14.0 mm.; width 5.0 mm. A single example without label in the Levette collection, but with scarcely a doubt from California ..... **panticulatus** n. sp.

The three species *spraguei*, *gracilior* (*longicollis* || Mots.) and *horni*, of LeConte, also belong apparently to this group, but not having representatives of them at hand it is impossible to insert them definitely in the above table.

Group V—*angustus* Dej.

This group is composed of a moderate number of very small, parallel, more or less slender and sometimes linear species, inhabiting the more median parts of the Pacific coast regions, and, besides *angustus*, includes *inanis* and perhaps also *caligans* of G. H. Horn. Those before me may be known as follows:

Form not exactly parallel, the prothorax evidently narrower than the elytra, piceous-black, moderately shining, the elytra slightly alutaceous; head rather small, the impressions deep, abrupt, narrow and cleft-like, feebly diverging; eyes rather well developed, but not very convex; prothorax slightly longer than wide, the sides broadly arcuate, gradually converging behind very nearly to the angles, where there is a short strong sinus, the angles acute and rather prominent; base margined only very near the sides, four-fifths the maximum width; surface convex, extremely finely margined, the stria fine, not entire, inner impression linear, fine, moderately deep, more than a fifth the total length, the outer also fine, linear and deep like the inner, but only slightly more than half as long; elytra oblong-oval, nearly three-fourths longer than wide, twice as long as the prothorax and a fourth or fifth wider, evenly rounded behind, the sides very feebly arcuate and parallel; striæ fine but rather deep, smooth and impunctate, the scutellar moderately long but extremely fine, the intervals not quite flat; striæ on the flanks finer and feebler than those thence to the suture; line of lateral foveæ very broadly interrupted; legs only moderately long, rather slender. Female slightly stouter than the male just described, with more oval and laterally rounded elytra and shorter outer thoracic impression, bounded externally by a more obtuse elevation. Length (♂ ♀) 10.0–10.5 mm.; width 3.2–3.5 mm. California (Placer Co.),—Koebele.....**inanis** Horn

Form exactly parallel, the elytra not distinctly wider than the prothorax, the latter with entire basal margin; size smaller.....2

2—Form stouter, dark rufous in color throughout and strongly shining; head rather small, with the impressions unusually long, broad and strong, slightly arcuate and diverging; eyes well developed but not very convex; prothorax evidently longer than wide, parallel, the base being even somewhat wider than the apex; sides broadly and distinctly rounded, gradually feebly converging basally, becoming feebly sinuate very near the angles, which are nearly right and very sharp but not prominent; base feebly sinuate medially, strongly margined throughout the width and about eight-ninths (♀) to six-sevenths (♂) the maximum width; surface convex, very finely margined at the sides, the apex only feebly sinuate, the angles narrowly rounded: stria fine, not entire, the basal impressions fine, deep and lineiform, the outer about half as long as the inner and still shorter and feebler in the female; elytra oblong, feebly arcuate at the sides, rounded at apex, three-fifths longer than wide, dis-

tinctly less than twice as long as the prothorax and barely perceptibly wider, slightly more evidently in the female, the striæ strong, deep, impunctate, those on the flanks even coarser and deeper than the others but more approximate; intervals convex, feebly so suturad, the lateral line of foveæ widely interrupted; scutellar stria long, deep and distinct; humeral denticle small but strong; legs moderate. Length (♂♀) 8.0–8.5 mm.; width 2.5–2.8 mm. California (Sta. Cruz Mts.).....**crucialis** n. sp.

Form very slender, parallel, piceous-brown to obscure rufous, shining throughout; head small though relatively larger than in the preceding, the impressions similar; eyes a little smaller and still less convex; prothorax as long as wide (♀) or somewhat elongate (♂), the base and apex equal; sides only very feebly arcuate, a little more rounding apically, very feebly converging, becoming very gradually straight posteriorly to the minutely prominent angles; base much more feebly margined than in the preceding and extremely near the maximum width in both sexes; stria and impressions nearly similar but with the lateral margin still distinctly narrower, excessively fine; elytra almost similar in form and striation, except that the striæ are a little finer, especially on the flanks. Length (♂♀) 6.7–8.0 mm.; width 2.0–2.25 mm. California (San Francisco and Napa Co.). [*linearis* Lec.].....**angustus** Dej.

Caligans Horn, which the author states (Tr. Am. Ent. Soc., 1891, p. 33) should be included in this group, is said to be still more slender and elongate than *angustus*, with very small eyes, with single basal thoracic impressions and without trace of the basal marginal line so conspicuous in *angustus* and especially in *crucialis*; the elytral striæ are said to be obsoletely punctate, the length 10–11 mm., and the type locality Sylvania, Cal. The hind trochanters of the male in *inanis* are two-thirds as long as the femur and gradually attenuated to a very fine point; in the male of *angustus* they are more oval, with the apex rather narrowly blunt and are a little more than half as long as the femur; in the male of *crucialis* they are distinctly less than half as long as the femur, still more oval and more obtuse at tip than in *angustus*.

Elongatus, of Schaeffer, apparently belongs to this group and is probably closely allied to *inanis*, if not identical.

Group VI—*longicollis* Lec.

A special group seems advisable for a number of species, among the most minute of the first division of *Pterostichus* in the LeContean sense. They are stouter in form than those of the preceding group and more ventricose as a rule, have but a single subbasal

thoracic impression at each side and the base of the pronotum is invariably margined from side to side; beyond these features there is however considerable diversity in structure, especially of the thoracic angles and sternal process. This group is rather northern in range. The species in my collection may be defined as follows, the typical species of the group apparently not at hand:

Hind angles of the prothorax distinctly defined and not rounded, though sometimes obtuse.....2

Hind angles broadly rounded.....5

2—Body decidedly ventricose, the prothorax much narrower than the elytra; prosternal process not at all margined.....3

Body more parallel, the elytra not or only slightly wider than the prothorax (*longicollis* section).....4

3—Form suboval, strongly convex, polished throughout, deep black, the legs rufo-castaneous; head rather small, with deep diverging impressions of moderate length; eyes well developed and rather convex; labrum unusually small, feebly sinuato-truncate, with rounded angles; antennæ rather short; prothorax as long as wide (♀) to slightly elongate (♂), the sides well rounded, converging posteriorly, becoming very briefly though distinctly sinuate just before the angles, which are right, very sharp and subprominent; base very faintly sinuate (♂) to rectilinear (♀), strongly margined, four-fifths the maximum width; apex very feebly sinuate, with the angles nearly right and scarcely at all blunt; surface convex, very finely margined, the stria distinct, attaining base but not apex, the depression nearly linear, impressed, deep, rather sharp at the bottom, a fourth the total length, the surface external thereto convex; elytra short, oval, only two-fifths longer than wide, two-fifths wider than the prothorax, obtusely rounded at apex, the sides arcuate; humeral denticle wholly obsolete; striæ fine, well impressed and punctulate (♂), or feeble and impunctate (♀), the series of lateral foveæ not interrupted but more widely spaced medially; legs moderate; tarsi very slender; hind trochanters of the male obtuse at tip, nearly half as long as the femur. Length (♂ ♀) 7.5–8.2 mm.; width 2.5–2.8 mm. Oregon (Clackamas Co.).....**pumilis** n. sp.

Form suboval, moderately convex, shining throughout, obscure testaceous in color, the legs even slightly paler; head rather small, with strongly diverging, moderate, arcuate and lineiform impressions, the labrum and eyes as in *pumilis;* antennæ moderate; prothorax barely as long as wide to a little shorter, the sides broadly rounded from apex almost to the basal angles, where they become very slightly sinuate, the angles slightly obtuse though sharply defined; basal marginal line fine and deep, the median sinus feeble, the base nearly five-sixths the maximum width and a little wider than the apex, which is very evenly and moderately sinuate, the angles right and slightly blunt, deflexed; surface moderately convex, the impression rather short and shallow and not attaining the base, further

from the sides than in the preceding; median stria fine, subentire; lateral margins very fine; elytra evenly oval and convex, short, not one-half longer than wide, fully a third wider than the prothorax, the striæ fine, feebly impressed, impunctate, the intervals nearly flat; scutellar stria forming an evenly continuous part of the first stria, the basal part of the latter being widely detached and perfectly similar in the two female examples at hand; legs short, the tarsi rather long, very slender. Length (♀) 6.7–7.1 mm.; width 2.3–2.6 mm. California (Humboldt Co.—Hoopa Valley of the Trinity River)..... **humilis** n. sp.

4—Subparallel, rather stout, strongly convex, shining throughout and deep black, the legs pale castaneo-rufous; head small, the impressions deep, straight and very strongly diverging; eyes convex and well developed, the antennæ moderate, testaceous throughout; prothorax relatively large, as wide as long, the sides parallel, just visibly arcuate, rounding apically and moderately converging in about basal third, becoming broadly and just visibly sinuate toward the angles, which are very obtuse, due to the adjacent arcuation of the base, but minutely and sharply subprominent at apex; base broadly, feebly sinuate medially, arcuate laterally, the marginal line entire but very fine; apex as in *humilis* but with more rounded angles; surface convex, moderately finely margined at the sides, the impression short, a fifth the total length, attaining the base but extremely feebly and subindefinitely impressed; median stria strong, subentire; elytra short, oblong-oval, convex, scarcely one-half longer than wide, about a sixth wider than the prothorax and much less than twice as long, the apex subevenly rounded; sides broadly and moderately arcuate, the humeral denticle minute though evident; striæ smooth and impunctate, strong and deep, the intervals rather strongly convex from suture to sides, not different on the flanks, the line of foveæ uninterrupted; scutellar stria extremely short and very oblique; prosternal process obtuse and finely, strongly margined at tip; tarsi moderately long, very slender. Length (♂) 6.8 mm.; width 2.6 mm. California (locality unknown)..... **fuchsi** Schf.

5—Body elongate, parallel, shining throughout and rather convex, red-brown in color; head relatively large, being three-fourths as wide as the prothorax, the impressions abrupt externally, gradually shallow internally, oblique; eyes well developed, moderately convex; prothorax as long as wide to a little longer, the sides broadly, subevenly arcuate, a little more rounding apically and slightly more converging basally, though rounded, to the obliterated and broadly rounded basal angles, the base finely margined, barely two-thirds the maximum width, the apex much wider than the base and having nearly the maximum width, evenly and moderately sinuate, with the angles rather obtuse and distinctly rounded; surface evenly convex, excessively finely margined at the sides, the depression short, linear but impressed, not attaining the base, the stria fine but rather deep, not quite entire; elytra short, oblong-oval, not quite one-half longer than wide, not distinctly wider than the prothorax (♂), the sides broadly arcuate, the apex rounded; striæ impunctate,

moderately impressed, the scutellar very short, barely extending beyond the fovea, the intervals feebly convex; subapical marginal sinus almost obsolete; legs rather short, the tarsi very slender; prosternal intercoxal process not margined. Length (♂) 7.2–7.7 mm.; width 2.55–2.65 mm. California (Humboldt Co.—Arcata). Three examples ..... **ovicollis** Schf.

The only one of the above species that can be compared with *longicollis* Lec., is *fuchsi*, and on direct comparison of the above described example of the latter, as identified from description, with the type of *longicollis* many years ago, I made this note: "Somewhat resembles *longicollis* but more robust and with a much slighter sinuation near the basal angles." In his original description of *longicollis*, LeConte states that it is piceous-black, elongate, subcylindric, with the prothorax rather convex, apparently somewhat longer than wide and with the sides rounded, posteriorly narrowed, striate at each side at base, the sides briefly sinuate before the small and prominent basal angles; elytra striate, with the intervals almost flat and the striæ moderately deep, impunctate, elongate, not wider than the prothorax, the scutellar stria very short; prosternal process not margined. Length 8.2 mm. Oregon. From the original description of *sphodrinus*, that species would appear to be allied as much to this group as to *adoxus*, but the size is somewhat larger and the geographic habitat widely different. *Arizonicus* Schf. may be attached provisionally to this group.

Group VII—*adoxus* Say.

The reasons for adopting this group rest almost as much upon habitat as habitus; it is the only group of the first division—having no dorsal elytral fovea—that occurs in the Atlantic regions of the continent, excepting a group possibly necessitated by *sphodrinus*, as implied above, and includes such forms as *adoxus*, *zephyrus*, *grandiceps* and *rostratus*, of strongly convex, somewhat ventricose form, highly polished, deep black integuments throughout and strongly convex strial intervals, these characters imparting a facies quite different from anything occurring in the Pacific regions. Omitting for the present *rostratus* and *grandiceps*, which differ from *adoxus* and allies in the very large head, the four species before me may be known as follows:

Prothorax very moderately narrowed posteriorly, the base fully three-fourths the maximum width.....2

Prothorax strongly narrowed posteriorly, the base very distinctly less than three-fourths the maximum width.....3

2—Form more elongate and less ventricose, the elytra (♂) longer, fully two-thirds longer than wide and barely a third wider than the prothorax, the latter larger than in *adoxus* but of the same general form, except that the basal angles are distinctly rounded; elytra similar in striation, except that the scutellar stria is very short, being simply a posterior attenuation of the fovea; legs rufo-castaneous, the femora a little darker. Length (♂) 13.5–13.8 mm.; width 4.8 mm. New Jersey and Pennsylvania.....**rejectus** Lec.

Form less elongate and more ventricose; head moderate, the impressions rather fine but deep, arcuate and diverging; epistoma sinuato-truncate, the labrum rectilinearly truncate; prothorax nearly as long as wide, the sides rounded, gradually converging, becoming straight posteriorly, then broadly and very faintly sinuate to the angles, which are sharp and generally slightly prominent, the single latero-basal impression long, broadly and deeply concave, the stria distinct but not entire; apex very feebly sinuate, the angles scarcely advanced and well rounded; elytra (♂) only about one-half longer than wide and fully two-fifths wider than the prothorax, the scutellar stria long and deep. Length (♂♀) 11.5–14.0 mm.; width 4.0–4.8 mm. Rhode Island and Lake Champlain to North Carolina (Asheville). Fifteen examples. [*tristis* Dej. and *interfector* Newm.].
adoxus Say

3—Head smaller, less than three-fifths as wide as the prothorax, the impressions rather deep, arcuate though subparallel, the eyes larger than in *adoxus* but less convex; prothorax relatively still smaller, nearly as long as wide, the sides more strongly rounded, more converging posteriorly and becoming very deeply sinuate for a long distance before the angles, which are acute and laterally very prominent; base much more deeply sinuate; apex more sinuate, the angles less rounded; surface similarly convex, the impressions and median stria nearly similar; elytra still shorter, less than one-half longer than wide, two-fifths wider than the prothorax, the striæ similarly very deep though not wholly unmodified as they are in *adoxus*, but faintly crenulate, the scutellar shorter but evident. Length (♂) 11.5 mm.; width 4.25 mm. Locality unrecorded.
zephyrus Csy.

Head as in *adoxus*, fully three-fifths as wide as the prothorax, the impressions similar, the eyes rather large, very convex; prothorax nearly similar, except as stated above, and in being slightly narrower and apparently somewhat longer than wide; elytra notably narrower and more elongate, evidently more than one-half longer than wide, fully two-fifths wider than the prothorax, the striæ very deep, smooth and unmodified, the intervals very convex, the scutellar stria long. Length (♀) 11.3–12.5 mm.; width 4.4–4.6 mm. Wisconsin (Bayfield),—Wickham.....**tetricula** n. sp.

Rejectus is well distinguished from *adoxus* by its more elongate form, elongate elytra and larger prothorax, having the basal angles blunt though to a varying degree; it is principally distinct, however, in the very different scutellar stria, as described above. *Zephyrus* is widely distinct from any of the others in the large and deep anteangular sinus at the sides of the prothorax and the very acute and laterally prominent angles, as well as the still shorter elytra, with feebly crenulate striæ, smaller head and general habitus. *Tetricula* is allied to *adoxus* rather closely, but may be distinguished at once by the narrower and more elongate outline, more posteriorly narrowed prothorax and longer elytra. As to *sustentus* and *subarcuatus*, of LeConte, I am unwilling to express an opinion in the absence of the types. A note which I made on viewing the type of *sustentus*, states that it is not *zephyrus*, the thoracic sides being much more strongly sinuate basally in the latter, and that *sustentus* is a valid species; its habitus must therefore be visibly different from that of *adoxus*. One female from an unrecorded locality before me is much stouter than any other example of *adoxus*, but does not seem to differ much otherwise, except in the obtuse and blunt basal thoracic angles; its dimensions are 12.8 by 5.0 mm.

The more systematic part of the present study of *Pterostichus* ends here, but allusion will be made to some other groups as follows:

Diligendus group.

This group begins a long series of Pterostichids having dorsal foveiform punctures on the elytra and they are more essentially peculiar to the Atlantic faunal regions; here there is but a single puncture on each elytron, situated behind the middle near the third stria, or between the second and third. Heretofore the group has been considered purely Atlantic in range, but the following species shows that it extends to the Pacific coast:

Pterostichus wrangelli n. sp.—Subparallel, moderately convex, shining, black, the elytra, under surface and legs with a piceous tinge, the trochanters and tarsi paler; head rather small, the impressions moderate, arcuately diverging, the eyes convex; labrum rectilinearly truncate; antennæ testaceous throughout; prothorax about a sixth wider than long, the sides rounded, converging posteriorly, becoming broadly though very distinctly sinuate toward the angles, which are right, very sharp and somewhat prominent or subeverted; base feebly sinuate medially, margined laterally, nearly five-sixths the maximum width, the apex feebly

sinuate and with rather broadly rounded angles; surface rather depressed, flattened or subimpressed latero-basally, the inner impression moderately long but feeble, attaining the base, the outer obsolete, the lateral margins moderate, rather abruptly widening at base; elytra oblong, one-half longer than wide, parallel, with feebly arcuate sides and rather obtusely rounded apex, barely a fourth wider than the prothorax, the striæ smooth and unmodified, deeply impressed, the scutellar very short, barely extending beyond the fovea, the intervals rather strongly convex throughout; fovea a little behind the middle, on the left midway between the second and third striæ in the type, on the right near the third stria; lateral series of foveæ not interrupted; prosternal intercoxal process obsoletely margined at the sides, strongly so about the very broadly obtuse apex; legs moderate, the first two joints of the rather slender hind tarsi strongly grooved externally. Length (♂) 10.8 mm.; width 4.0 mm. Alaska (Fort Wrangell),—Wickham.

The last abdominal segment of the male has a fine but strong abrupt carina, extending not quite to the base, the summit of which is abruptly and sharply tuberculate at about the centre of the segment, the adjoining surface not impressed. This structure strongly recalls a corresponding sexual character in the comparatively gigantic species of *Holciophorus*. The type of this interesting species was found among numerous examples of *castaneus* Dej., from about the same region; it is a little larger and more parallel, but otherwise presents very nearly the same outward appearance.

The species described by the writer under the name *osculans*, proves to be the same as *diligendus* Chd. (Lec.) and indeed was so identified by Horn (Ent. Amer., I, 1885, p. 108); the single dorsal fovea had been unobserved in drawing up the original description. Some years subsequently Dr. Horn discovered, through Baron Chaudoir, that the true *diligendus* of that author, was the species named *mancus* by LeConte, rendering it necessary to find another name for *diligendus* Lec. nec Chd. An old MS name of LeConte was thereupon utilized by Dr. Horn for this purpose, and the name of LeConte's *diligendus* now appears in our lists under the name *apalachius* Horn (Lec. MS), wholly disregarding the fact that the name *osculans* had been given the species by the writer—necessarily to this species and none other, as, at the time Dr. Horn gave out his synonymy of *osculans*, there was no other interpretation of *diligendus* Chd., than that of LeConte, and also as it truly agrees with that interpretation (Proc. Acad. Phila., 1873, p. 305) in the male sexual characters, which are quite different from those of *mancus*. The name of the species with synonymy is therefore as follows:

Pterostichus osculans Csy.—Cont. Descr. and Syst. Col., N. A., Phila, 1884, Pt. 1, p. 2; *diligendus* Lec. nec Chd.—Proc. Acad. Phila., 1873, p. 305; *apalachius* Horn—Tr. Am. Ent. Soc., 1892, p. 41 (typographic error for *appalachius*).

While referring to typographic error, it should be stated that LeConte inadvertently misspelled the name of his *Pterostichus corrusculus* (l. c., 1873, p. 310), which should of course be *corusculus*. Mr. Frost recently sent me a specimen of this remarkably small *Pterostichus*, taken near Framingham, Mass., and some time before I had received from New Haven an example of a still more minute but otherwise somewhat similar species, though with shorter elytra and larger head, said to have been found in a box of nursery stock from England.

Stygicus group.

Of this conspicuous group of polished black, deeply striate, Atlantic species, my collection still lacks *superciliosus* Say and *agonus* Horn, but there are three species at hand that do not fit any of the descriptions thus far published; these are the following:

Pterostichus probus n. sp.—Oblong, elongate, convex, deep black and polished; head four-sevenths as wide as the prothorax, the impressions very large, broadly concave; labrum transverse, rectilinearly truncate; antennæ rather long, the tenth joint on the flat side nearly two and one-half times as long as wide; prothorax large, a fifth wider than long, somewhat obtrapezoidal, the sides rounded anteriorly, becoming oblique and straight in about basal half, the angles obtuse and rounded; base broadly sinuate medially, four-fifths the maximum width; surface convex, deeply concave and strongly reflexed along the side margins, the impressions broadly confluent, the concavity punctate, the lateral carina parallel with the sides and strong; median stria strong and entire; elytra nearly two-thirds longer than wide, distinctly wider behind the middle than at base and fully two-fifths wider than the prothorax, rapidly rounding behind to the subangular apex, the sides feebly converging and almost straight from about the middle to the slight humeral rounding, the denticle wholly obsolete; striæ very deep, finely punctulate along the bottom, the scutellar long and deep, the intervals all very convex and polished; tarsi long and notably slender, piceo-rufous. Length (♀) 18.0 mm.; width 6.4 mm. North Carolina (Asheville).

Allied to *coracinus* Newm., but differing in the more oblong, less convex, more rectilinearly basally narrowed elytra, longer and much more slender tarsi and in the form of the mentum tooth, this being moderately emarginate in *coracinus*, but sinuate half way to the base

in *probus*, with the sides in the form of thin vertical wings; the antennæ also are much longer.

Pterostichus erebeus n. sp.—Much smaller, more slender and very much less convex, similar in color and in the polished lustre, except that the tarsi also are black; head nearly similar, the labrum less transverse; antennæ shorter, the tenth joint a little less than twice as long as wide; prothorax but slightly wider than long, the sides almost evenly rounded from apex to base, more converging basally, the angles very broadly rounded, almost obliterated; base feebly sinuate medially and arcuate laterally, nearly four-fifths the maximum width; surface with feeble transverse wavy lines, strongly and deeply margined and reflexed at the sides, deeply striate along the middle, the basal impressions completely fused, forming a deep elongate-oval cavity, which is rugulose at the bottom, the carina strong but short, converging toward the edge posteriorly as in *adjunctus;* elytra oblong, rounded parabolically at tip, parallel, with very feebly arcuate sides, only very moderately convex, three-fifths longer than wide, nearly a third wider than the prothorax, the striæ deep, impunctate, the scutellar long and deep, joining the first as in the preceding and *coracinus* and perfectly continuous with the first stria, the basal part of which is detached; intervals very strongly convex; tarsi moderately long and slender. Length (♀) 14.0 mm.; width 4.8 mm. Wisconsin (Bayfield),—Wickham.

Allied to *coracinus* but very much smaller and differing also in the narrower form, much more flattened upper surface, still more broadly rounded thoracic angles and shorter, though strongly developed, carina. From *adjunctus* Lec., which I believe to be valid, it differs in the broadly rounded basal thoracic angles, narrower and less convex form, smaller size and many other features.

Pterostichus vapidus n. sp.—Oblong-oval, rather strongly convex, deep black and polished throughout, the tarsi piceous; head fully three-fifths as wide as the prothorax, the impressions rather deep and broadly concave; labrum truncate, with the angles rounded; tenth antennal joint (♂) twice as long as wide, the antennæ brown as usual; prothorax a fifth wider than long, nearly as in *coracinus*, but with the hind angles more rounded, the broadly confluent impressions forming a pit, punctured but with the central parts slightly convex, the carina almost similar; elytra very short, oval, two-fifths longer than wide, a third wider than the prothorax, the sides strongly arcuate; striæ deep, completely impunctate, the scutellar long and deep, joining the first without interrupting the latter; intervals convex; tarsi very slender. Length (♂) 12.5 mm.; width 4.8 mm. New York (Adirondack Mts.),—Prof. Kemp.

The left side of the prothorax at base, in the unique type, is distorted, the setigerous fovea in the hind angle being greatly enlarged, and the elytral striæ are distorted and irregular internally

though not externally, but I do not think that the peculiar brevity of the elytra, they being only equal in length to the head and prothorax combined, can be due to abnormality, as they are symmetrical in outline. This species differs very much from any other in general appearance, and, from any form of *coracinus*, in its absolutely impunctate striæ.

Of *coracinus*, there are a number of subordinate forms, mutually so closely allied, however, that it would require careful and detailed study, with very large material, to delimit and define them.

Ventralis group.

A few small species, having remarkably polished integuments and coarse and externally subobliterated, generally strongly punctate striæ, alone constitute this group; the dorsal foveæ are generally three in number. LeConte included *tumescens* in his most recent arrangement, but I think the general habitus of this species, and several others allied thereto which are at hand, having oblique thoracic impressions, should rather form part of *Evarthrus* than of *Pterostichus*. The following is allied to *ventralis:*

Pterostichus putus n. sp.—Form rather slender, moderately convex, polished throughout and testaceous in color; head rather short, moderate in size, the impressions short, deep and arcuate; labrum with rounded angles; prothorax about a fifth wider than long, the sides evenly and strongly rounded from apex to base, more converging basally, the angles very obtuse and rounded; base unmargined, sinuate from side to side and narrow, but little more than half the maximum width; surface subevenly convex, very finely margined at the sides, the single latero-basal impression longitudinal, linear, not attaining the base; median stria very fine and feeble; elytra three-fourths longer than wide, not evidently wider than the prothorax, oblong-oval, with feebly arcuate sides and strongly rounded subparabolic apex, the striæ strong, moderately impressed, rather closely and conspicuously punctate, the seventh feeble, wholly obliterated before the middle, the scutellar subobsolete, hardly visible behind the fovea; intervals very moderately convex; tarsi rather short, very slender. Length (♂ ♀) 8.5–8.7 mm.; width 2.6–2.8 mm. Texas.

The abdomen is punctured irregularly toward the sides as in *ventralis*, from which *putus* may readily be distinguished by the narrower form, narrower thoracic base and finer side margins, the former sinuate throughout the width and not merely medially, as it is in *ventralis*, in the very much stronger, closer and more con-

spicuous strial punctures, less obliterated lateral striæ and still more vestigial scutellar stria, more slender tarsi and in general habitus to an appreciable extent.

Abacidus Lec.

The very peculiar habitus of this group probably warrants the retention of the name *Abacidus* Lec., but *Peristethus* Lec., should be regarded as synonymous. The characters given by LeConte for the separation of groups D and E of *Pterostichus* (Bull. Bk., 1882, p. 17) are repeated frequently in true *Pterostichus* and therefore should not be regarded as generic in this case. *Fallax* Dej., of which a pair was sent me by Mr. Manee, collected in North Carolina, is the type of *Abacidus* and a very strongly differentiated species, as is also *hamiltoni* Horn. I do not seem to have a single example of *sculptus*, which is said to be common in the South. The following is either a distinct species or a very remarkable modification of *permundus;* I feel disposed to adopt the former hypothesis at least provisionally:

Abacidus planifer n. sp.—Oblong-oval, feebly convex, the elytra broadly flattened medially, deep shining black throughout; head as in *permundus;* prothorax also as in that species, except that the outer impression is more oblique and that the entire surface is covered with a system of feeble transverse wavy lines, as in many California species of the *planctus* group; punctures on the deplanate side margins fine and sparse; elytra subequal in width to the prothorax, as in *permundus*, except that the striæ are completely impunctate and the intervals throughout perfectly flat; groove of the first hind tarsal joint fine, barely glimpsable and subobsolete; abdomen punctured and rugulose laterally; prosternal process margined behind as in *permundus*. Length (♀) 15.0 mm.; width 5.8 mm. Indiana.

The peculiar transverse wavy lines of the pronotum and the perfectly flat strial intervals, are the principal distinguishing features of this form, but I cannot judge of the constancy of these characters, having only a single example at hand.

Pœcilus Bon.

Lucublandus group.

The variations in form, color, convexity and lustre of the strial intervals, number of dorsal foveæ and size, among the numerous representatives of *lucublandus* Say, from various parts of the coun-

try, are very remarkable and one of these was named *Pterostichus manhattanis* by the writer many years ago; I am convinced that it is a synonym of that species, however, so far as evidence at hand is interpretable and as stated by Horn, but I think that that form which is so abundant in Utah—dark greenish-black, a little smaller and shorter than *lucublandus* and apparently named *fraternus* by Say—is a valid species; the prothorax is always much shorter and more transverse than in *lucublandus*. These species will constitute a well defined group of *Pœcilus* and in some ways, such as the structure of the pronotum, come between *Abacidus* and the next group, probably of more typical *Pœcilus*, although the three basal joints of the antennæ are similarly carinate.

Chalcites group.

Pœcilus is now generally accorded generic weight, so that the original name *chalcites*, given by Say to the species subsequently named *sayi* by Brullé, becomes valid. Two unnamed species have recently been received as follows:

Pœcilus snowi n. sp.—Elongate-suboval, moderately convex, shining, very dark violaceous-blue to obscure green in color; under surface and legs deep black; head small, half as wide as the prothorax (♂), a little less (♀), the impressions deep, parallel, broadly concave and separated by twice the distance of either from the sides; epistoma and labrum truncate; palpi black; antennæ black, the two basal joints largely testaceous, the carina of the three basal joints strong; prothorax a sixth to fifth wider than long, the sides evenly arcuate from apex to base, more converging anteriorly, the basal angles obtuse but minutely and denticularly prominent; base a fourth wider than the apex, fully seven-eighths the maximum width, margined except medially and transverse; surface convex, finely and abruptly reflexed at the sides throughout, the stria rather strong, subentire, the inner impression deep, sharply marked at the bottom and linear, the outer elongate-oval, very near the base, both impunctate; elytra oblong-oval, three-fifths to two-thirds longer than wide, rather flattened inwardly, the sides parallel, feebly arcuate, the apex subangularly rounded, scarcely a fourth wider than the prothorax, the striæ moderate, finely punctate, the scutellar long, the intervals only very feebly convex. Length (♂ ♀) 11.7–13.5 mm.; width 4.3–5.0 mm. Arizona (San Bernardino Ranch, Cochise Co.),—F. H. Snow.

Allied to *texanus* Lec., but differing in its narrower and more elongate form, much more elongate prothorax, darker and less brightly metallic coloration, less evident abdominal punctures and somewhat longer antennæ and hind tarsi. From *cyaneus* it differs

in its more anteriorly narrowed and less transverse prothorax, much larger eyes and longer scutellar stria.

Pœcilus pimalis n. sp.—Form rather stout, oblong, moderately convex, shining, metallic green, the anterior parts more obscure, the under surface black, the legs piceous-black; head small, barely more than half as wide as the prothorax, the eyes large, convex and prominent, the antennæ testaceous throughout, the three basal joints carinate; impressions rather long and sharply marked, diverging; prothorax a third wider than long, the sides evenly rounded from apex to base, the angles obtuse but minutely and denticularly subprominent; base a fifth wider than the apex, four-fifths the maximum width, transverse, the marginal groove broadly interrupted medially; surface moderately convex, very finely margined at the sides throughout, the stria very fine, far from entire, the inner impression rather shallow but sharply linear, flexed outward slightly basally, the outer very short and feeble; punctures wanting; elytra oblong, but little more than one-half longer than wide, parallel, with nearly straight sides, rounding at base and parabolic at apex, nearly a third wider than the prothorax; humeral denticle wholly obsolete; striæ rather abruptly deep, fine and feeble externally, finely punctate, the scutellar long and parallel; intervals feebly convex internally, flat externally, the sixth and seventh striæ subobsolete basally; tarsi rather long and slender. Length (♀) 11.0 mm.; width 4.4 mm. Arizona (Tuçson).

There appears to be no described species with which this can be closely compared. I obtained a single specimen in the suburbs of the town; the anterior tarsi are missing, but it appears to be a female.

Bothriopterus Chd.

The species of the *luczoti* group have a consistent habitus, differing materially from any type of *Pterostichus* preceding, and, as the above name now exists in the literature of the subject, it may as well be utilized to distinguish them in a generic sense. The species are rather numerous, but are deficient in structural diversity; they all have five or six strong elytral foveæ; those in my cabinet may be known by the following general characters:

Elytra strongly shining in both sexes. Body larger, stouter and more convex, black, the legs and antennæ black, the latter gradually brown apically; head moderate, the eyes prominent, the impressions somewhat vestigial, indistinct; labrum nearly black, the palpi pale testaceous; prothorax large, the sides evenly rounded from apex to base, the angles very obtuse, but slightly and obtusely prominent; sides rather narrowly but strongly reflexed; base equal in width to the apex; linear impression deep, having but few punctures scattered inwardly therefrom; elytra oblong, with broadly rounded sides

and convex surface, about a fourth wider than the prothorax, the striæ punctulate, feebly impressed inwardly but not at all so externally, the five foveæ strong. Length (♀) 12.0 mm.; width 4.6 mm. Pennsylvania—LeConte. Locality not indicated in the Levette collection. Apparently not common.....**pennsylvanicus** Lec.

Elytra strongly shining in the male but more or less evidently sericeous in the female.....2

2—Converging sides of the prothorax becoming distinctly sinuate toward the basal angles. Body rather short in form, rather convex, shining, black, the legs dark rufo-piceous, the palpi piceous-black; antennæ brown distally; head fully three-fifths as wide as the prothorax, the eyes rather prominent, the impressions short but somewhat deep, distinct, diverging; prothorax not quite a third wider than long and much narrower than the elytra, the sides rounded, converging and sinuate basally, widest at two-fifths from the apex; angles right and very sharply defined, subprominent; base barely visibly wider than the apex; surface convex, rather abruptly though moderately reflexed at the sides, having many punctures basally, except medially, the linear impression deep, less than a third the total length; elytra barely one-half longer than wide (♀) to three-fifths (♂), oblong, with slightly rounded sides, a little wider behind the middle than at base, more than a third wider than the prothorax; surface polished (♂) or not strongly sericeous (♀), finely striate, the striæ feebly impressed suturally and basally, minutely, irregularly subpunctulate, the scutellar very long, nearly a fifth the total length. Length (♂ ♀) 10.5–11.2 mm.; width 4.0–4.2 mm. California (Lake Tahoe). **latescans** n. sp.

Converging thoracic sides oblique basally, feebly arcuate to straight, never distinctly sinuate.....3

3—Form stouter, the elytra always distinctly wider than the prothorax; female elytra sometimes very strongly sericeous and faintly brownish.....4

Form more elongate and more parallel, the elytra never more than very slightly wider than the prothorax in either sex and never strongly sericeous.....7

4—Prothorax relatively rather large and less transverse, the oblique sides posteriorly generally feebly arcuate to the obtuse but minutely denticulate basal angles. Body unusually stout, oblong-suboval, black and strongly shining throughout (♂), or with the elytra brownish and strongly, subopaquely sericeous (♀); under surface and legs piceous or rufescent, the palpi testaceous; head well developed, the impressions feeble and irregular; antennæ blackish-piceous; prothorax scarcely more than a fourth wider than long, the base and apex equal, the sides rather strongly rounded, widest near apical third; surface convex, rather thickly punctured laterally toward base, broadly and strongly reflexed at the sides, the linear impression deep and acute; elytra three-fifths (♂) to one-half (♀) longer than wide, oblong-oval, slightly widest behind the middle and nearly a third wider than the prothorax, rather finely striate, the striæ faintly and closely, minutely and irregularly punctulate, more

impressed inwardly as usual, the scutellar long. Length (♂♀) 11.0–11.7 mm.; width 4.3–4.6 mm. Lake Superior. [*orinomus* Kirby nec Steph.].....**oblongonotatus** Say

Prothorax relatively smaller and shorter, the oblique sides posteriorly straight or nearly so.....5

5—Body larger and much stouter, nearly as in the preceding. Color black throughout, the antennæ and palpi rufo-piceous; surface shining, the elytra (♀) very strongly sericeous; head moderate, the impressions feeble but evident, nearly straight; labrum black; mandibles feebly rufescent basally; prothorax nearly two-fifths wider than long, the sides rounded; base feebly arcuate, equal in width to the apex, the angles very obtuse, the subprominent denticulation extremely feeble; surface and the rather broad margins nearly as in the preceding; elytra relatively much larger, one-half longer than wide, almost one-half wider than the prothorax and three times as long, oblong, the striæ very fine and unimpressed throughout the width, very feebly and minutely irregular, the scutellar rather long, the first evenly bifurcating basally. Length (♀) 11.8 mm.; width 4.65 mm. Oregon (Clackamas Co.).....**sericeus** n. sp.

Body smaller, rather less broad in form, the elytra of the female only feebly sericeous.....6

6—Upper surface very moderately convex, shining; color deep black, the legs black, the palpi piceous with the tip pale; head moderate, the eyes rather large and prominent, the impressions distinct, arcuate and diverging; labrum black; mandibles still shorter than in the preceding, often rufescent; prothorax fully a third wider than long, the sides rounded; angles obtuse but sharply defined, sometimes very minutely subprominent; base transverse, barely as wide as the apex; surface with a moderate patch of close punctures latero-basally and with the linear impression rather short but deep, the side margins unusually deeply and strongly channeled and reflexed; elytra three-fifths longer than wide, polished, a little shorter and evidently, though not very strongly, sericeous in the female, about a fourth wider than the prothorax, the striæ fine, gradually moderately impressed suturally (♂) or very fine and unimpressed throughout (♀). Length (♂♀) 9.2–10.7 mm.; width 3.2–3.9 mm. Alaska (Fort Wrangel),—Wickham; British Columbia (Metlakatla),—Keen and California (Siskiyou Co.),—Koebele. [*vitreus* Dej., *seriepunctatus* Mann. and *oblongiusculus* Mots.]. Abundant....**adstrictus** Esch.

Upper surface more convex, black, shining, the legs slightly picescent, the palpi pale piceo-testaceous; antennæ brown, blackish at base; labrum black; head moderate, with prominent convex eyes, the impressions somewhat broad and ill-defined though rather deep; mandibles small; prothorax less transverse than in *adstrictus*, nearly a third wider than long, the sides almost evenly rounded from apex to base, the angles obtuse but minutely and acutely subprominent, the base transverse, barely as wide as the apex; side margins much less widely reflexed or deeply channeled than in *adstrictus*, the punctures and impressions nearly similar; elytra nearly similar but a little more elongate, a fourth to nearly a third wider than the pro-

thorax, the striæ fine and very feebly, irregularly quasi-punctulate as usual, barely at all impressed suturally even in the male as a rule, the scutellar long, generally not joining the first; lustre strongly shining though very faintly alutaceous (♂) or but little more evidently so (♀), this character being less developed than in any of the preceding species. Length (♂ ♀) 9.8–11.2 mm.; width 3.6–4.0 mm. California (Truckee, near Lake Tahoe, elev. about 6000′). Abundant.....**latebricola** n. sp.

7—Elytra feebly æneous in lustre. Body rather narrow and elongate, moderately convex, very shining, black, the legs feebly picescent, the palpi rufo-piceous, rufous distally; antennæ blackish-piceous, gradually brownish distally; head moderate, the impressions not deep and somewhat diffuse; labrum black, with rather broadly rounded angles; prothorax a third to two-fifths wider than long, the sides moderately rounded, generally somewhat arcuate to the minutely prominent though obtuse basal angles, the base feebly sinuate medially, fully as wide as the apex or a little wider; surface convex, only moderately punctured latero-basally, the sides rather deeply concave and reflexed but not very wide, the impressions strong and the basal marginal groove at the sides deep; elytra rather long, two-thirds (♂) to three-fifths (♀) longer than wide and respectively a sixth to nearly a fourth wider than the prothorax, the striæ fine, not noticeably impressed in either sex even suturally, those on the flanks so fine as to be almost obsolescent; lustre shining (♂) or very faintly sericeous (♀), the scutellar stria very long, joining the first. Length (♂ ♀) 10.5–11.0 mm.; width 3.4–3.8 mm. Labrador (W. St. Modest),—Sherman; Rhode Island and Arkansas. Newfoundland —Dejean (type locality). Females rather rare.....**luczoti** Dej.

Elytra not at all æneous in lustre; species of the western faunal regions..8

8—Striæ strongly impressed, the intervals notably convex, gradually a little less so apically. Body black, shining; head moderate, the impressions rather deep but irregular; mandibles finely, closely strigose medially; palpi testaceous, piceous basally; prothorax about a fourth wider than long, the sides rounded, moderately oblique and straight posteriorly, the angles obtuse but denticularly prominent; base not quite so wide as the apex; surface convex, rather broadly and deeply channeled and reflexed at the sides, the basal punctures and impressions about as usual in the preceding; elytra three-fifths longer than wide, only a fourth or fifth wider than the prothorax, parallel, the sides feebly arcuate; striæ impunctate, the scutellar long and as deep as the others; surface excessively faintly alutaceous, the micro-reticulation visible but not strong; tarsi moderately slender. Length (♂) 11.0 mm.; width 4.0 mm. California (Siskiyou Co.),—Koebele.....**shastanus** n. sp.

Striæ feebly or very moderately impressed as usual.....9

9—Body elongate, convex, subparallel, deep black, polished, the legs scarcely paler, the palpi rufo-piceous; head moderate, the impressions fine, feebly arcuate, distinct and regular or nearly so; prothorax only a fourth to fifth wider than long, the sides broadly and moderately rounded, oblique and feebly arcuate to nearly straight basally, the

angles obtuse, obtusely subprominent; base equal in width to the apex, four-fifths the maximum width; surface convex, the lateral concave margin moderate, the latero-basal punctures unusually few and fine, the median stria and longitudinal impressions strong; elytra parallel, fully three-fifths longer than wide, a little shorter (♀), a fourth to fifth wider than the prothorax (♂), slightly more (♀), the lustre respectively polished or feebly sericeous, the striæ fine, irregularly subpunctulate. Length (♂♀) 11.0–11.8 mm.; width 4.0–4.3 mm. Rocky Mountains, from Arizona to Idaho. Abundant in Boulder Co., Colorado. The female much less common than the male..... **saxatilis** n. sp.

Body shorter in form, similar in coloration and lustre in both sexes; head nearly similar; palpi testaceous throughout; prothorax much shorter and more transverse, fully a third wider than long, the sides strongly rounded, more strongly converging and nearly straight posteriorly, the angles very obtuse but not rounded and rendered somewhat prominent by the puncture in the bead; base distinctly narrower than the apex and two-thirds to three-fourths the maximum width; surface convex, with rather deep stria and impressions and a larger and denser patch of punctures latero-basally than in the preceding, the sides similarly reflexed; elytra shorter, one-half longer than wide and not wider than the prothorax (♂), or slightly shorter (♀), the lustre and striation as in the preceding, except that the striæ are less evidently, in fact scarcely at all, punctulate, the scutellar stria long. Length (♂♀) 10.7–11.7 mm.; width 3.75–4.2 mm. Colorado—Levette collection..... **laxicollis** n. sp.

In the long series of *adstrictus* before me, there is some diversity; the Fort Wrangel examples, for instance, are a little larger and very slightly more elongate than those from Metlakatla, and the single Siskiyou specimen, which is a male, has somewhat shorter and more posteriorly dilated elytra. It would be exceedingly difficult to work out all the taxonomic forms in this genus, and those named above are the only ones that are obviously distinct by reason of form, sculpture or lustre, combined with habital environment. This diversity in the *adstrictus* type might have been inferred from the many names already given, there being some published that are not mentioned in the table, such as *alternatus* and *obtusangulum* Mots., *motschulskyi* Mäkl., and *sexpunctatus* Mann. The synonymy given above under *adstrictus* is taken from the recent European catalogue of Heyden, Reitter and Weise. The type of *vitreus* Dej., was from Kamtschatka, and Dejean says nothing about the sides of the prothorax being slightly sinuate behind, with the hind angles right, as stated by LeConte. The separation, also, of

luczoti from *vitreus* and *orinomus* Kirby, by the form of the thoracic side margins appears to me to be impracticable.

The species placed here by LeConte under the name *Pterostichus oregonus* (Proc. Acad. Phila., 1861, p. 339) is black, shining, the elytra opaculate in the female, the prothorax not at all shorter than wide, the converging sides subsinuate posteriorly and the sides finely margined; hind angles nearly right, the latero-basal punctures sparse and with the impression rather long, the elytral striæ fine and impunctate, the intervals flat, the foveæ five in number and the length 13.7–14.5 mm. It is said to resemble the eastern *adoxus* very closely and has the thoracic margin no wider than in that species. It must be a very exceptional type in the genus and is unknown to me at present.

Piesmus Lec.

The type of this genus is the *Feronia submarginata* of Say, which is placed as a synonym of *monedula* Germ., in the Munich catalogue, among the chaotic mixture called *Platysma*. I have in my collection two species of *Piesmus*, one from North Carolina, more elongate, with moderately impressed though coarse striæ, which are distinctly but not extremely punctured, which is the true *submarginatus*, and the other, from Florida, having distinctly shorter elytra, the striæ of which are extremely coarse, in fact sulciform and still more coarsely and conspicuously punctured, which may be regarded as *monedulus* Germ. There is therefore no necessity for considering Say's species a synonym, or even as a variety of *monedulus*.

Lophoglossus Lec.

The peculiar habitus of the species of *Lophoglossus* is consistent throughout and quite distinct from that characterizing any of the foregoing Pterostichid types, being remindful however in this respect of *Bothriopterus* and *Piesmus*, so that it may be regarded as one of the groups of the *Platysma* series. The body is oblong, subparallel, only moderately convex, very polished, black as a rule, with transverse prothorax and three dorsal foveæ on the elytra. The prothorax is strongly and conspicuously margined at the sides, the latter becoming gradually oblique and usually broadly sinuate posteriorly. The species are moderately numerous, the six in my collection at the present time being easily recognizable as follows:

Elytral striæ deep and very distinct throughout the length, never more than slightly stronger basally than apically.....2

Elytral striæ very much finer and feebler apically than basally; body not so large; elytra polished in both sexes.....3

2—Body large and broad, deep black and very shining, the elytra in the female opaque; legs, antennæ and palpi black; head large, the impressions long, very deep and straight; epistoma and labrum sinuate; mandibles smooth; prothorax transverse, one-half wider than the head, nearly one-half wider than long, the sides rounded, converging and becoming straighter basally, the angles abruptly right and prominent; base sinuate medially, wholly unmargined, four-fifths the maximum width; surface broadly and feebly convex, broadly channeled and strongly reflexed at the sides, the anterior transverse impression acute and lineiform, the posterior obsolete, the median stria deep, subentire, the latero-basal impressions very deep, broadly confluent basally, the inner extending for two-fifths from the base, having a few fine scattered punctures; elytra oblong, two-fifths wider than the prothorax, one-half longer than wide, the sides parallel and feebly arcuate, the tip broadly, obtusely rounded; striæ very fine but deeply impressed, minutely punctulate, the seventh finer than the others but distinct throughout, the scutellar long and deep, the intervals rather convex, feebly so externally, the humeral denticle obsolete; under surface finely punctured laterally. Length (♀) 22.2 mm.; width 8.3 mm. Missouri (St. Louis).
haldemani Lec.

Body smaller and relatively narrower, shining in both sexes, black; palpi black, the antennæ brown, black basally; head rather large, the eyes prominent; impressions deeply concave and straight but much shorter than in the preceding; prothorax transverse, fully two-fifths wider than long, two-fifths wider than the head, the sides rounded, moderately converging and becoming gradually rather deeply sinuate basally, the angles right, slightly everted and prominent; base fully five-sixths the maximum width; surface rather depressed, the stria and transverse impressions as in the preceding, the lateral margins more abruptly and much less widely reflexed, the confluent basal impressions deeply concave, with but few punctures, the inner extending less anteriorly than in *haldemani;* elytra longer, fully three-fourths longer than wide, barely a third wider than the prothorax, parallel, with feebly arcuate sides, the striæ less fine, impunctate and very deeply impressed throughout the length, the seventh feebler but distinct throughout, the intervals very convex; middle tibiæ (♂) with the subapical inner tooth small though acute and erect, the apical process obsolete; last ventral evenly rounded and minutely margined throughout, the median sinus almost completely obsolete. Length (♂) 17.8 mm.; width 6.0 mm. New York. [*complanatus* Dej., and *strenuus* Lec.].....**tartaricus** Say

3—Elytral striæ distinct though fine posteriorly, with the intervals there feebly but perceptibly convex; body much broader in form, with the head larger. Form oblong, feebly convex, polished, black; head well developed, with very prominent eyes, the impressions

deep, broad and straight, extending posteriorly to a line through the middle of the eyes; prothorax a third wider than the head, fully two-fifths wider than long, the sides rounded, moderately converging posteriorly, becoming gradually very broadly and feebly sinuate, the hind angles right and rather sharply marked; base fully three-fourths the maximum width; surface rather depressed, the transverse impressions as in the preceding, the stria deep; confluent impressions forming a deep concavity, which is scarcely at all punctured, the inner and outer impressions more or less lineiform, separated by a feeble convexity at the bottom of the concavity, the inner not extending anteriorly more than slightly; lateral margin deeply but not widely concave except basally, where it becomes broad as usual; elytra short, oblong, less than one-half longer than wide, fully two-fifths wider than the prothorax, the striæ finely, very indistinctly punctulate, deeply impressed basally, where the intervals are very convex; seventh stria subobsolete throughout the length; male with the subapical denticle of the middle tibiæ very slender, small in size, the apical process obsolete; last ventral evenly rounded and with very fine marginal bead, having a small broad and scarcely visible median sinuation. Length (♂ ♀) 15.0–17.7 mm.; width 5.8–6.6 mm. Indiana and Illinois. Cleveland, Ohio—LeConte.

scrutator Lec.

Elytral striæ very fine, with flat intervals posteriorly, the body smaller in size and of narrower and less depressed form.....4

4—Form moderately elongate and convex, polished and deep black throughout in both sexes, the tarsi piceous; antennæ dark brown, blackish basally, the palpi rufo-piceous; head rather large, with very prominent eyes, the impressions finer and shallower than in *scrutator*, arcuate and not extending to the middle of the eyes; labrum sinuato-truncate; prothorax formed nearly as in the preceding but with the sides posteriorly not sinuate, being straight or very feebly arcuate nearly to the angles, where there is a scarcely perceptible sinuation, the angles very obtuse but denticularly prominent, the base three-fourths the maximum width; surface very feebly convex, the median stria and anterior impression as in the preceding, the marginal gutter and reflexed edge conspicuous, the basal impressions linear, not confluent, the concavity including them shallow, impunctate; elytra oblong, three-fifths longer than wide, only very slightly and not evidently wider than the prothorax (♂), a little wider (♀), the sides feebly arcuate; apex strongly rounded; striæ moderate, finely and obscurely punctulate, deeply impressed basally at the sides, to near the middle suturally, elsewhere very fine and unimpressed, the seventh almost completely obsolete, the scutellar long and deep; intervals convex basally; male with the subapical spine of the middle tibiæ acute and distinct, the apical process feeble but evident, sharply angulate; last ventral more narrowly rounded than in the preceding, with a broader flattened marginal beading and a narrower, deeper and very distinct median sinus. Length (♂ ♀) 15.0–15.7 mm.; width 5.2–5.75 mm. Illinois.....**illini** n. sp.

Form and general characters almost as in *illini* throughout, including the male sexual characters, except that the apical acute process of the middle tibiæ is a little stronger and more prominent, but having a stouter body, with broader elytra, only one-half longer than wide and fully a third wider than the prothorax, the striæ being more distinctly punctate, more obsolete apically and with the intervals everywhere flat or very nearly so even basally and suturally, though the striæ become a little more distinct in the corresponding regions indicated in *illini*. Length (♂) 16.0 mm.; width 6.0 mm. Indiana (Levette collection)..... **bispiculatus** n. sp.

Form narrower than in *illini*, the size smaller; surface extremely shining, deep black, rather convex, the tarsi piceous; palpi obscure testaceous, the antennæ nearly black, becoming slightly pale near the apex; head well developed, the eyes large though not quite so prominent as in *illini*, the impressions similar but deeper and broader; labrum much narrower; prothorax only about a third wider than long, the sides rounded, converging posteriorly, becoming gradually very distinctly sinuate, the angles nearly right and very sharp but only feebly prominent; base as wide as the apex and three-fourths the maximum width; surface rather convex, throughout nearly as in the two preceding; elytra three-fifths longer than wide, about a fifth wider than the prothorax, oblong, parallel, with feebly arcuate sides and well rounded apex, the striæ and intervals nearly as in *illini*, except that the strial punctures are more distinct and that both the sixth and seventh striæ are subobsolete throughout the length; male with the subapical tibial spine sharp though small, the apical process obsolete; last ventral more broadly rounded than in *illini*, with a finer marginal bead and with the sinus similarly very narrow but extremely feeble. Length (♂) 13.7 mm.; width 4.8 mm. Connecticut (Lyme),—A. B. Champlain..... **vernix** n. sp.

Possibly *bispiculatus* may prove to be rather a subspecies of *illini* than a fully distinct species, but its appearance is quite different. *Gravis*, of LeConte, is the only known species not included in the above table; it is described as being black, moderately shining, the elytra of the male less shining; form and sculpture as in *tartaricus*, except that the sides of the prothorax are simply rounded, not at all sinuate near the hind angles, which are obtuse; the lateral margin is rather more widely reflexed behind and the length of the unique male type, which is in the Horn collection and probably taken in Pennsylvania, is 19 mm.

Diplochila Brullé.

In my former review of this genus (Ann. N. Y. Acad., IX, p. 347), the species at hand were not all correctly identified, reliance having been placed too readily upon ostensibly accurate identifications in

certain collections with which they had been compared. Referring to the original descriptions and measurements, it becomes apparent at once that I do not have *impressicollis* or *laticollis* at all; the former is a small species 12 by 5 mm. in size, and has more distinct transverse thoracic impressions than the others; the latter is about 14 mm. in length. It should be said in this connection that certain past studies in this genus have been especially superficial in the endeavor to reduce the number of species; some of the proposed synonymy, such as the association of *assimilis* with *laticollis* and *striatopunctatus* with *impressicollis*, will fail to bear the light of reason. *Major* is abundantly distinct from the other hitherto published species in its large size, cephalic characters and in other respects; it bears no resemblance to *laticollis*, other than in generic facies and is not by any means a subspecies. The type locality of *laticollis* Lec., is Syracuse, N. Y., and the Austin, Texas, specimen representing it in my former study does not seem to accord very well with the description given by LeConte. The size of the head in this genus differs among the various species nearly as in *Dicælus;* in *planulata* and *nupera*, for instance, it is relatively very small in comparison with *expansa*, being scarcely half as wide as the prothorax. The hind angles of the prothorax are sharply defined and a little more than right throughout in the species here defined. The species are moderately numerous, though less so than in *Dicælus;* those represented in my cabinet may be separated as follows:

Large species, not under 17 mm. in length; head large, always distinctly more than half as wide as the prothorax.....2

Smaller species, never over 15 mm. in length, the head relatively smaller as a rule.....3

2—Form broadly oval, feebly convex, deep black and shining; head large, fully three-fifths as wide as the prothorax, the anterior impression large, extending half way to the base; labrum deeply emarginate, the bottom of the sinus rounded; antennæ slender, of the usual form; prothorax large, three-fourths as wide as the elytra, less than three-fifths wider than long, but little narrowed apically, the sides broadly rounded, becoming feebly convergent and straight or broadly and very feebly sinuate basally; surface with the stria—somewhat abbreviated apically and basally as usual in this group of the genus—distinct, the posterior impressions at outer fourth deep, longitudinal and linear, the surface thence to the angles broadly subdepressed; elytra oblong, with broadly arcuate parallel sides, nearly one-half longer than wide, the striæ usually punctulate, fine and feebly impressed, the sixth almost and the seventh completely obliterated;

intervals broad, nearly flat. Length 19.0–21.0 mm.; width 8.0–8.7 mm. Iowa (Keokuk).....**expansa** n. sp.

Form narrower and more convex, deep black and shining; head much less large, although distinctly more than half as wide as the prothorax, the impression and the labrum nearly similar; prothorax much shorter and relatively wider, three-fifths to two-thirds wider than long, in form and impression nearly similar, fully four-fifths as wide as the elytra, the latter two-fifths to one-half longer than wide, oblong, with broadly arcuate sides, the striæ feebly punctulate, rather fine but deeply impressed internally, becoming finer and feeble externally, the fifth very feeble, the sixth nearly, the seventh quite, obliterated, the single interstitial puncture as usual. Length 17.0–18.2 mm.; width 7.2–7.3 mm. Kansas.....**oblonga** n. sp.

Form oblong-oval and less elongate, broadly and distinctly convex, black and shining; head distinctly less large, only a little more than half as wide as the prothorax, the impression nearly similar, the labrum however more angularly emarginate; antennæ very slender as usual, testaceous except basally; prothorax much shorter and more narrowed anteriorly, nearly three-fourths wider than long, three-fourths as wide as the elytra, otherwise nearly similar; elytra oblong, with feebly arcuate, parallel sides, about one-half longer than wide, the striæ not punctulate but almost exactly as in *expansa*, from which it differs in the shorter, broader, more anteriorly narrowed prothorax and more triangularly, broadly emarginate labrum and distinctly shorter antennal joints distally in the female. Length 18.5 mm. width 7.9 mm. Louisiana.....**major** Lec.

3—Elytral striæ obsolescent laterally; head relatively small; elytra wholly black.....4

Elytral striæ distinct throughout, the head relatively large, the strial intervals alternately black and dark rufo-testaceous.....5

4—Cephalic impression broad, formed nearly as usual and broadly truncate behind, the head barely at all more than half as wide as the prothorax; labrum broadly, angularly incised, the incisure asymmetric in position somewhat as in *major*; antennæ slender, the joints a little shorter than usual; prothorax nearly three-fifths wider than long, much narrowed anteriorly, with rounded sides, the apex barely three-fourths as wide as the base, the impressions as usual, the surface rather more declivous at the sides but not at all reflexed and with a very fine marginal bead; elytra oblong-oval, with unusually arcuate sides, fully two-fifths wider than the prothorax, convex, the striæ for the greater part impunctate, deeply impressed, with convex intervals internally, the first five strong, the sixth feeble and seventh almost obsolete, vestigial, the single fovea of the third interval well developed. Length 14.5 mm.; width 6.0 mm. Kansas.....**cliens** Csy.

Cephalic impression broad but posteriorly arcuate in outline, the labrum more obtusely, angularly emarginate, the antennal joints longer and more slender; head small, half as wide as the prothorax, the eyes prominent; prothorax moderately transverse, a little more than one-half wider than long, much narrowed anteriorly, with obliquely

rounding sides, widest behind the middle, the apex barely two-thirds as wide as the base, the sides not reflexed, having a very fine marginal bead; surface between the longitudinal impressions and the angles with a very faint oblique impression joining the longitudinal one at base; elytra short, oblong, with feebly rounded sides, scarcely two-fifths longer than wide, the surface broadly flattened, rapidly and convexly declivous at the sides, the striæ deeply impressed, with convex intervals internally, gradually feebler externally, finely, very obsoletely punctulate, the first four deep, fifth abruptly much more feeble, sixth and seventh equal, barely traceable and virtually obsolete, vestigial; single fovea of the third interval unusually feeble, barely discoverable. Length 14.8 mm.; width 6.0 mm. Texas (Austin). [*laticollis* Csy. nec. Lec. olim] . . . . . **planulata** n. sp.

Cephalic impressions not confluent, very small, at the apical margin and widely separated; head small, half as wide as the prothorax, the labrum very obtusely, angularly emarginate, the antennal joints shorter than usual but very slender; prothorax fully one-half wider than long, much narrowed at apex, widest a little behind the middle, the sides anteriorly oblique and unusually feebly arcuate; surface with the longitudinal impressions deep, a little within outer fourth, without supplemental impression, the sides declivous to the marginal bead throughout, the latter excessively fine; median stria fine, feeble though entire; elytra oblong, with feebly arcuate sides, a little more rounding at base, a third wider than the prothorax, almost one-half longer than wide, the striæ coarse, deeply impressed and basally punctate internally, the fifth, sixth and seventh obsolete, the third and fourth obliterated basally and apically; third interval with two small foveæ, instead of the usual single fovea. Length 9.7 mm.; width 4.2 mm. Florida (Lake Worth). . . . . **nupera** Csy.

5—Form more elongate than usual, evenly and distinctly convex, subalutaceous; head with rather large and prominent eyes, almost two-thirds as wide as the prothorax, with the two impressions moderately small and partially confluent at the apex of the front; labral notch obtusely angulate; antennal joints rather long and slender; prothorax barely more than one-half wider than long, but little narrowed at apex, the sides subparallel, widest but little before the middle, moderately and unusually evenly arcuate from apex to base; impressions nearly as in the preceding, the margins however distinctly concave and reflexed, very finely basally, more broadly apically, this being a reversal of the general rule; elytra oblong, more elongate than in any other species, parallel, with feebly arcuate sides, nearly one-half wider than the prothorax, almost three-fifths longer than wide, the striæ fine, feeble and finely punctate though equal and very distinct throughout the width, the intervals very nearly flat. Length 14.0 mm.; width 5.9 mm. Wisconsin (Bayfield).

alternans Csy.

The characters separating the small species are relatively more radical than those apparent among the larger ones, but there can

be little or no doubt of the validity of the latter as described. The asymmetry of the labral notch has seemingly not been noticed before; there is also considerable diversity in the form of this notch. Sexual differences, aside from those affecting the anterior tarsi, are slight. *Alternans* is remarkable in having the elytral striæ almost equally distinct throughout the width, *nupera* in having most of the striæ obsolete, the first and second being the only entire ones and also in having two interstitial foveæ instead of the usual one; *planulata* is strikingly distinct in form and in the very feeble, almost obsolete single interstitial fovea, and the labral notch of such species as *expansa* and *oblonga*, with its subparallel sides and narrowly rounded bottom, is also very exceptional.

Dicælus Bon.

In this genus a considerable number of undescribed species have accumulated since the last systematic work was published. In the *furvus* group, for example, we have the two following:

Dicælus carolinensis n. sp.—Elongate-oval, moderately convex, rather stout, deep black and opaque throughout; head actually but not relatively large, scarcely more than half as wide as the prothorax, minutely rugulose, the two anterior impressions moderate; antennæ but little longer than the head and prothorax, black, gradually attenuated and brown distally; prothorax fully a third wider than long, the sides gradually converging and broadly, almost evenly arcuate from base to apex, the latter deeply and evenly sinuate and about three-fifths as wide as the base, which has the usual form, the median truncate and retracted part one-half the maximum width; surface feebly convex, broadly and strongly reflexed at the sides, with an obliquely, anteriorly arcuate impression at each side, from near the basal angle to two-fifths from the base at inner two-fifths, the two impressions faintly connected transversely by the very feeble subbasal impression, the subapical also very feeble, the median stria distinct; lateral edges even, fine anteriorly, thickened basally: lustre opaque, the sculpture consisting of very fine short dense and generally longitudinal rugulæ, arranged in transverse wavy lines, confused laterally and basally; elytra oblong-oval, a little wider than the prothorax, scarcely more than a third longer than wide, parabolically rounded behind from near the middle, the sides very feebly arcuate; striæ very deeply impressed, not in the least punctate, the intervals convex and subequal throughout, the humeral carina strong and acute, long, gradually disappearing posteriorly. Length 22.5 mm.; width 9.2 mm. North Carolina (Southern Pines),—Manee. A single male.

There is no species known to me with which this can be compared very satisfactorily; it is much larger than *furvus*, and the sides of the prothorax converge almost evenly from base to apex.

Dicælus subtropicus n. sp.—Small in size, rather narrowly oval, deep black and opaque throughout; head rather short, evidently more than half as wide as the prothorax, smooth, the obsolete rugulosity excessively minute, the anterior impressions distinct, prolonged obliquely along the sides of the epistoma; antennæ rather short, filiform, not attenuated but brown distally; prothorax a third to fourth wider than long, parallel, arcuately and moderately narrowing apically, the median part of the base more than half the maximum width and feebly sinuate; surface nearly flat, rather narrowly but distinctly reflexed at the sides, gradually a little more broadly basally, the edge even and fine throughout, having, near inner two-fifths and basal third at each side, a fine longitudinal impressed line, extended by broad and feeble impression obliquely to the base near lateral fourth, and also anteriorly for a long distance, the basal and apical transverse impressions almost obsolete; median stria fine but evident; lustre opaque, the sculpture excessively minute and not distinct, not at all rugose; elytra but very slightly wider than the prothorax, two-fifths (♀) to one-half (♂) longer than wide, more gradually and less obtusely rounded behind in the latter sex, the sides feebly arcuate; striæ very deeply impressed, finely but very distinctly punctate; intervals strongly convex, the alternate ones distinctly broader and more convex but not at all cariniform, the humeral carina acute but only moderately prominent, gradually obtuse and obsolescent posteriorly. Length 13.0–14.5 mm.; width 5.0–5.7 mm. Florida (Palm Beach),—Kinzel. Six examples.

Differs from both *ovalis* and *furvus* in its narrower form, thoracic impressions and alternately distinctly wider and more convex strial intervals, also in the evidently punctate striæ, the punctures laterally somewhat indenting the sides of the intervals, as in *crenatus* though less strongly.

Dicælus debiliceps n. sp.—Elongate and slender, subopaque, deep black throughout; head smaller than in any other species, less than half as wide as the prothorax, smooth and rather shining, the sculpture vestigial and faint; anterior impressions deep, oblique; antennæ slender, filiform; prothorax not distinctly shorter than wide, the sides broadly, subevenly arcuate, converging a good deal anteriorly, becoming parallel toward base, the surface throughout and the two anterior marginal punctures nearly as in *elongatus* and *simplex*, the apex relatively more narrowed than in either; elytra two-thirds longer than wide, gradually arcuately narrowing behind from near the middle, at which point they are very slightly wider than the prothorax, moderately convex, the striæ rather fine and only very moderately deep, the intervals equal and broadly, feebly convex, the humeral carina as in *elongatus*. Length (♀) 14.7 mm.; width 5.65 mm. Pennsylvania (Buena Vista Spring, Franklin Co.).

This species belongs to the *elongatus* series and resembles it closely in general characters, but it is smaller and very much more slender, with a relatively still smaller head and more equal and very much

flatter strial intervals; from *simplex* Dej., which it more nearly resembles in the small head, it differs in its more elongate form, still slightly smaller head, more apically narrowed prothorax, more elongate elytra and flatter strial intervals; *simplex* is not identical with *elongatus*, being smaller, with more abbreviated elytra and smaller head.

Dicælus ovipennis n. sp.—Elongate, rather slender and feebly convex, somewhat shining, the elytra alutaceous, deep black throughout; head elongate, relatively large, nearly as in *teter* but with still more elongate neck and smaller apical impressions, two-thirds as wide as the prothorax, the latter relatively small, a fourth wider than long, in general form, impressions and sculpture nearly as in *teter*, but with more evenly arcuate sides, widest at the middle and not before the middle as it is in that species; elytra relatively much more inflated, evenly oval, with arcuate sides, widest at the middle and nearly one-half wider than the prothorax, one-half longer than wide, the striæ, intervals and humeral carina as in *teter*. Length (♂) 17.0 mm.; width 6.4 mm. North Carolina (locality unrecorded).

Allied rather closely to *teter* but differing very greatly in general facies, because of its small parallel prothorax, with evenly rounded sides, and the inflated elytra; the anterior tarsi of the male are less dilated than in that species, the middle tarsi shorter, the second palpal joint longer and the fourth shorter; the micro-granulation of the elytra is less fine and stronger, so that the surface is more opaque, especially at the sides.

Dicælus angustus n. sp.—Form and facies nearly as in *politus*, the integuments similarly deep black and polished; head and prothorax relatively a little larger, the latter flatter and more nearly as long as wide, much less distinctly narrower than the elytra, the impressions nearly similar but the side margins anteriorly are less narrowly reflexed; elytra broader, one-half longer than wide, barely a fourth wider than the prothorax, the sculpture throughout similar. Length 14.0 mm.; width 5.0 mm. Tennessee.

This species is allied closely to *politus* Dej., but is a little larger and broader, with larger and more depressed, more quadrate prothorax; it differs very perceptibly in habitus from any one of a very large series of *politus*, kindly given me by Mr. A. B. Champlain and taken at Rockville, Pennsylvania, and others from Indiana in the Levette collection, the latter examples agreeing perfectly with the former.

Dicælus speciosus n. sp.—Form and coloration nearly as in *splendidus*, but with a notably smaller head, this being barely at all more than half

as wide as the prothorax, the latter nearly similar in form, but having the broad marginal concavity slightly divided behind the middle by an extero-anteriorly projecting feeble ramus of the convexity bounding the lateral impressions externally; under surface deep black, the propleura very minutely, feebly and closely rugulose, not metallic but opaque, the abdomen with a few faint violet glints laterally. Length (♂) 19.8–23.0 mm.; width 8.3–9.3 mm. New Mexico.

The mentum in *Dicælus* has not been well described; it has a large and deep emargination, the bottom of which is broadly, evenly and feebly sinuate, and it is partially closed by a membranous or coriaceous extension of the base and sides, this part being rectilinearly truncate from side to side and of very diverse development. In *splendidus* this plate, partially filling the mental emargination, extends through about half its length; it is dense and blackish in structure and has a median, anteriorly attenuated, longitudinally impressed elevation from the base, which upon cursory examination has very much the appearance of a tooth. In *speciosus* the emargination of the mentum is much narrower, with less flaring sides and the plate referred to is thin, pale testaceous and membranous and becomes contorted on drying; it extends anteriorly nearly to the end of the mentum, thus almost completely filling the emargination. This, together with the much smaller head, bifurcating marginal concavity of the pronotum, slightly smaller size and relatively somewhat longer hind tarsi, prompts me to believe that it is specifically different from *splendidus*, in spite of the almost complete similarity in coloration and form of the strial intervals. The smaller of the two type specimens has the pale membrane of the mental emargination greatly retracted, so that it fills only about a third of the length of the emargination; this male specimen has the head still a trifle smaller, being only half as wide as the prothorax and the latter is shorter and more transverse but otherwise as in *speciosus;* the elytra are a little shorter and the margins are bluish; its locality is not known.

There is one very decided mistake in our lists of this genus as now published, relating to *dilatatus* and *dejeani*. The latter is quite a different species from *dilatatus*, which, as taken abundantly by Mr. Champlain in Pennsylvania, agrees in every particular with the description and figure of *dilatatus* as given by Say. *Dejeani*, on the other hand, is a much stouter species, with strongly inflated

elytra, very much larger head and more transverse and less anteriorly narrowed prothorax; it never should have been associated closely with *dilatatus*. The single example in my collection is from Indiana, and it seems to be rather rare in collections.

Liodicælus n. gen.

This generic name may be suggested for those species now forming part of *Dicælus*, but differing from the others in having no trace of elytral striation, the elytra having, in the place of striæ, unimpressed series of very small punctures. This imparts a decided difference in habitus, though at the same time there appear to be but few other structural differences of prominence, except the shorter antennæ. The type may be described as follows:

Liodicælus evanescens n. sp.—Rather stout, oblong-oval and convex, shining but not polished, deep black throughout, without trace of coloration; head elongate, smooth, barely half as wide as the prothorax, the impressions feeble; antennæ (♂) much shorter than the head and prothorax, the outer joints gradually much shorter; prothorax fully a fourth wider than long, the sides parallel, arcuately rounding and converging anteriorly in less than apical half, the deeply sinuate apex less than two-thirds as wide as the base, the latter as in *Dicælus;* surface feebly alutaceous though not sculptured, except in having vestiges of fine transverse and well separated waving lines, moderately convex, rather broadly and strongly reflexed laterally, the edge smooth and rather thick, the anterior impression obsolete, the transverse subbasal one broad and very moderate though distinct from the basal angles obliquely and arcuately forward, ending at lateral fourth and basal fifth; there is on each side a deep smooth impression; median stria very fine and feeble; elytra parallel, with nearly straight sides, evenly rounded in about apical third or fourth, wider than the prothorax and nearly one-half longer than wide, convex, shining, perfectly smooth and without sculpture, having regular series of very fine and well separated punctures, varying somewhat in size in the series, the series distinct suturally, becoming completely obsolete externally, the first four or five series easily traceable though gradually fainter, the carina acute and well elevated, extending a little behind basal fourth. Length (♂) 18.0 mm.; width 7.5 mm. Arizona (San Bernardino Ranch, Cochise Co.),—F. H. Snow.

Allied apparently to *flohri* Bates, from San Angel, Mexico, but differing in its rather smaller size, longer humeral carina, more impressed and more apically narrowed prothorax and apparently more evident series of elytral punctures; *flohri* is described as being oblong-elliptic, "niger, vix nitidus," with the prothorax slightly narrowed anteriorly and everywhere smooth, the elytral striæ

everywhere obsolete, only the sutural and marginal series of punctures evident, the humeral carina short, strongly elevated and the length of male and female 19 to 20 mm. From *lævipennis* Lec., which it seems to resemble in size, it differs in its deep black coloration, without trace of violaceous tint, in the less transverse prothorax, which is said to be "basi capito triplo latior" in that species, shorter humeral carina, which is described as a third as long as the elytra in *lævipennis* and more obsolete series of punctures. The type of *lævipennis* was taken on the Platte River and the dimensions of the type are 17.5 by 7.7 mm.

***Liodicælus suffusus** n. sp.—Much smaller and less convex than the preceding, black, with distinct though sometimes partial violaceous bloom, alutaceous to strongly shining; head nearly similar, half as wide as the prothorax to a little less; antennæ (♂) only moderately slender but filiform, nearly as long as the head and prothorax, the outer joints rapidly abbreviated; prothorax shorter, a third wider than long, moderately convex, formed nearly as in the preceding but with thinner, though strongly reflexed, side margins, the median stria fine but distinct, subentire, the transverse impressions both obsolete or nearly so, the sublateral curved impressions of the preceding barely distinct to wholly obsolete; elytra nearly as in the preceding but less elongate and much less convex, barely two-fifths longer than wide, with series of punctures very distinct throughout the width, but, as usual, a little stronger suturally, the punctures small though deep, differing remarkably in form, some circular and others elongate; humeral carina rather strong and acute, short, obsolete near basal fourth or fifth. Length (♂ ♀) 13.5–15.8 mm.; width 5.6–6.3 mm. Mexico (Sierra Madre Mts., of Chihuahua),—C. H. T. Townsend. Abundant.

The nine examples at hand indicate a species which, by reason of the violaceous bloom, sometimes very strong throughout the upper surface, is remindful of *lævicollis* Lec., but it is very much smaller, with less transverse prothorax and very much shorter humeral carina; the under surface is deep and shining black, the sternal side-pieces faintly violaceous. In a few examples and by very oblique light, the surface of the third and fifth elytral intervals may be seen to be extremely faintly convex, a reversion to a common character in *Dicælus*. *Lævipennis* Lec., *flohri* Bates, *evanescens* and *suffusus* are the only species referable to *Liodicælus*, so far as now known.

Calathus Bon.

This genus, together with *Pristonychus* and *Pristodactyla*, is well distinguished from the other allies of *Platynus* by the serrulate or pectinate tarsal claws. In *Calathus* they are rather pectinate than serrulate, this condition obtaining more especially in *Pristonychus*, where the claws are much more feebly modified. The Atlantic coast and Sonoran species of *Calathus*, as distinguished from the purely Pacific coast types, are numerous and may be distinguished among themselves as follows:

Prothorax distinctly reflexed at the sides.....2
Prothorax flatter, scarcely at all reflexed at the sides or only very narrowly and feebly so toward base; surface shining, the micro-reticulation hexagonal as in *gregarius*.....7
2—Elytra strongly shining in both sexes, elongate-oval, black or feebly picescent, the thoracic sides, legs and antennæ testaceous; surface smooth and polished; prothorax subquadrate, feebly rounded at the sides and slightly narrowed at apex, fully four-fifths as wide as the elytra, the latter elongate-oval, with broadly rounded sides and without exposed humeri; male a little more slender than the female; micro-reticulation hexagonal. Length 8.0–10.0 mm.; width 2.9–3.8 mm. New Hampshire to Missouri.....**gregarius** Say
Elytra opaque or strongly alutaceous, apparently in both sexes but always in the female; micro-reticulation compressed, rhomboidal..3
3—Sides of the prothorax parallel, broadly, feebly and almost evenly arcuate from base to apex, only very slightly more converging apically than basally. Body elongate-oval, rather narrow and subdepressed, castaneous, the thoracic sides, legs, scutellum and antennæ testaceous; head dark testaceous; prothorax quadrate, the basal angles right but broadly rounded; surface with obsolescent rugulæ radiating from the median stria; elytra oblong-oval, with feebly rounded sides, almost a fourth wider than the prothorax, having very fine and feebly impressed striæ and almost flat intervals; side margins pale and distinctly reflexed; head a little more than half as wide as the prothorax; hind tarsi about as long as the tibiæ, the claws rather longer and straighter than usual, more abruptly hooked at apex. Length (♂) 8.5 mm.; width 3.1 mm. Arizona.
sonoricus n. sp.
Sides of the prothorax more rounded and much more convergent apically.4
4—Elytra rather shining though with an alutaceous lustre; body small, narrow, the hind tarsi (♂) very slender and rather shorter than the tibiæ. Piceous-black, the margins, legs and antennæ as usual; head small, only about half as wide as the prothorax, which is not quite as long as wide, otherwise nearly as in *opaculus*, the elytra relatively narrower, of the usual form, the side margins perhaps slightly more narrowly reflexed, the micro-reticulations strong, rhombiform, not quite so fine but especially not so laterally com-

pressed as in *opaculus*. Length (♂) 6.6 mm.; width 2.5 mm. Missouri (St. Louis). . . . . **alutaceus** n. sp.

Elytra more densely dull, not shining. 5

5—Color paler, apparently castaneous-brown when mature, the margins, legs and antennæ pale as usual. Body rather larger and stouter than in *opaculus*, the head and prothorax relatively a little larger but otherwise similar; elytra of the usual form, between a fourth and fifth wider than the prothorax and widest at the middle, very finely striate, the rhombiform micro-reticulations fully as fine as in *opaculus* or even finer but much more feeble, with their facets nearly flat and not convex; epipleura flatter basally but similarly wider at basal fourth than at base. Length (♀) 9.0–10.0 mm.; width 3.6–3.8 mm. North Carolina (Asheville) and New Jersey. Four examples. **appalachius** n. sp.

Color black, with the usual paler side margins, legs and antennæ. 6

6—Rather slender, the male and female of nearly the same size and outline, both very elongate-oval and rather narrow; head very little more than half as wide as the prothorax, the latter as long as wide, the apex about three-fourths as wide as the base; elytra oblong-oval, nearly a fourth wider than the prothorax, with very fine striæ; hind tarsi fully as long as the tibiæ. Length (♂ ♀) 8.0–9.5 mm.; width 3.0–3.7 mm. Rhode Island to Texas (Austin). . **opaculus** Lec.

Stouter than *opaculus*, the female very much stouter and with oval inflated elytra, similar in coloration and nearly similar in the opacity and micro-reticulation of the elytra; head a little larger; prothorax of similar form; elytra a third to two-fifths wider than the prothorax (♀), but nearly as in *opaculus* (♂), the male being notably more slender than the female; antennæ and tarsi somewhat longer than in *opaculus*. Length (♂ ♀) 9.3–10.3 mm.; width 3.2–4.1 mm. Kansas (Mt. Hope), Texas and Mississippi (Vicksburg). . . . . **obesulus** n. sp.

7—Elytral intervals broadly and feebly though evidently convex. . . . 8

Elytral intervals flat. 9

8—Form very elongate-oval, rather convex, strongly shining, black, the side margins not distinctly pale, except those of the prothorax toward base; head rather small; prothorax large, rather convex, almost as wide as the elytra, as long as wide, formed nearly as in *gregarius*, except that the side margin is feebly reflexed or deplanate only toward base, rather broadly so at the hind angles; elytra elongate-oval, shining, with fine striæ, the setigerous punctures of the third stria anteriorly, as usual shifting to the second posteriorly, three or four in number; coarse punctures of the outermost stria strong and equal from base to apex, widely separated; basal joint of the hind tarsi rather short, not quite as long as the next two combined. Length (♂ ♀) 7.4–9.0 mm.; width 2.8–3.4 mm. Colorado (Boulder Co.). . . . . **coloradensis** n. sp.

Form narrower, the size smaller, rather convex, almost similar in coloration, the prothorax relatively smaller, the head larger, the former as long as wide, with rather less rounded sides and scarcely more than three-fourths as wide as the elytra, which are more oblong-oval, with broadly and evenly arcuate sides, less elongate and more ob-

tusely rounded at apex, the side margins still more narrowly reflexed; tarsi nearly similar, the claws longer but arcuate from near the middle to the apex. Length (♂ ♀) 6.5–8.0 mm.; width 2.6–3.2 mm. Colorado—Levette collection. Five examples.....**reductus** n. sp.

9—Body larger, testaceous in color throughout, shining; head well developed, evidently more than half as wide as the prothorax, the antennal joints long and slender; prothorax nearly as long as wide, the sides almost evenly and broadly arcuate throughout, more converging anteriorly, the apex three-fourths as wide as the base, rather convex, the sides very finely reflexed, becoming more broadly deplanate basally, the longitudinal impressions near outer and basal fourth distinct; elytra oblong-oval, relatively much shorter than in either of the preceding, only about a fifth wider than the prothorax, obtusely rounded at apex; tarsal claws of only moderate length. Length (♀) 8.8–9.2 mm.; width 3.3–3.6 mm. New Mexico (locality unrecorded).....**acomanus** n. sp.

Body much smaller, more slender, shining, piceous-black, the legs, antennæ and thoracic side margins testaceous; head rather small, scarcely more than half as wide as the prothorax, the latter smaller, about as long as wide, the sides almost evenly arcuate throughout, the apex a little less narrowed than in the preceding, the surface and sides nearly similar, the impressions vestigial; elytra rather short and oblong-oval, fully a fourth wider than the prothorax, obtusely rounded behind, the striæ very fine, the intervals absolutely flat; punctures generally two before the middle on the third, and one near the apex on the second, stria; basal joint of the hind tarsi shorter than usual, distinctly shorter than the next two combined. Length (♂ ♀) 6.5–8.2 mm.; width 2.4–3.0 mm. Labrador (West St. Modest),—Sherman. Four examples.....**labradorinus** n. sp.

There may be some doubt as to the status of *appalachius*, though my four examples are distinctly larger and stouter than any of the females of *opaculus* at hand, and with correspondingly larger head and prothorax; if the pale coloration of the four examples holds constant through extended series, there will be no doubt of its specific standing. *Confusus* Lec., from Lake Superior, I do not have at present, though it may possibly be redescribed as one of the last four species of the table; it has been united with the Alaskan *ingratus* Dej., but I have no means of knowing how justly; it is probably not identical however. The American species of *Calathus* form a rather unsatisfactory study because of their monotony, and the Atlantic species are less isolated among themselves than those of the Pacific coast; among these latter forms I find an undescribed species which may be outlined as follows:

Calathus longulus n. sp.—Form elongate-oval, slightly ventricose, alutaceous, blackish-piceous, the elytra deep black and but feebly shin-

ing, opaculate; legs, antennæ and sides of the prothorax dark testaceous; head somewhat evidently more than half as wide as the prothorax, the antennal joints long and slender; prothorax relatively rather small, not quite as long as wide, the sides broadly arcuate, converging anteriorly, parallel basally, the basal angles rounded; surface broadly convex, distinctly concave and reflexed at the sides, more broadly and feebly basally; elytra oval, convex, three-fifths longer than wide and fully two-fifths wider than the prothorax, the striæ fine, the intervals flat, the microreticulations but little longer than wide, irregularly hexagonal, rather convex and shining, the incised separating lines deep; sides evenly and rather strongly arcuate; pectination of the tarsal claws much shorter than in any of the eastern species. Length (♀) 9.5 mm.; width 3.7 mm. California (Los Angeles Co.).

Allied rather more closely to *obscurus* Lec., than any other, but more elongate, with relatively much smaller prothorax and more inflated elytra; the antennæ are more elongate and the prothorax much less transverse, being in fact nearly as long as wide. There are before me extended series of all the California species except *behrensi*, which is represented by two examples only. *Quadricollis* is very abundant in the coast regions from Humboldt to Sta. Barbara; *obscurus* is rather less abundant from San Francisco to San Diego; *ruficollis* is by far the stoutest species and occurs abundantly about San Francisco; I do not happen to have it from any other locality. My two examples of *behrensi* are from San Diego and Calaveras Co.; it very much resembles *ruficollis*, except that it is less stout in build; *guadalupensis* is by far the largest American species of the genus; it is confined so far as known to the island of Guadalupe; *quadricollis* also occurs on the island, but apparently as a recent importation and is not endemic as in the case of *guadalupensis*.

Pristodactyla Dej.

In general habitus such species as *dubia* and *impunctata*, differ very decidedly from any of the above mentioned members of *Calathus* proper and, on this ground alone, it would seem advisable to retain the genus; but there are certain more specialized structural characters as well, such as the unmargined intercoxal process of the prosternum in *Pristodactyla*. The Munich catalogue does not recognize *Pristodactyla* and makes it a synonym of *Odontonyx* Steph., but the latter is sunk as a synonym of *Calathus* in the recent European catalogue, which gives to *Pristodactyla* full generic

value. In this catalogue *Pristodactyla* is ascribed to Chaudoir, but it is given to Dejean in the Nomenclator Zoologicus of Scudder and also in the Munich catalogue.

The species of *Pristodactyla* are not numerous, comprising at present the *Feronia impunctata* of Say, *dubia* and *advena* of LeConte and the Mexican *Calathus ovipennis* Putz.; also *corvina* Lec., which has been suppressed as a synonym of *impunctata*, but which seems to be specifically distinct, being larger and narrower than *impunctata* and more southern in habitat; at any rate its status should apparently not be less than that of a well marked subspecies of *impunctata*. The following is another subspecies of *impunctata:*

Pristodactyla impunctata ssp. **convexa** nov.—Elongate-oval, convex and polished, deep black, the legs and antennæ dark testaceous; head about half as wide as the prothorax, the latter large, nearly a fifth wider than long, the sides rounded, more converging basally, the angles very broadly rounded; surface convex, very finely reflexed at the sides, rather abruptly broadly so at base, uniting with the deep lineiform longitudinal impression near outer and basal fourth, the median stria distinct; elytra elongate-oval, not quite a third wider than the prothorax, the striæ rather fine, deeply impressed suturally. Length (♀) 11.2 mm.; width 4.3 mm. New York (Lake Champlain).

On comparing the type with a female of *impunctata* from Lake Superior, it is readily perceived to be larger and broader, with more elongate elytra, having the striæ more deeply impressed inwardly and the antennæ longer and more slender; the typical *impunctata* is represented in my collection from Rhode Island, Lake Champlain, Pennsylvania and northern Wisconsin.

Pristodactyla arizonica n. sp.—Elongate, rather depressed, piceous-black, moderately shining, the elytra opaque; legs dark piceous; tarsi and antennæ testaceous, the latter with the basal joint blackish; head rather large, fully three-fifths as wide as the prothorax, the antennæ slender, with elongate joints; prothorax about as long as wide, the base three-fourths the maximum width and four-fifths as wide as the apex, the sides broadly and almost equally rounded but more converging basally, the angles very broadly rounded; surface feebly convex, very finely reflexed at the sides, gradually very slightly less finely toward base. the longitudinal depressions rather broadly impressed but not deep, connected by a rather evident, medially somewhat anteriorly angulate, transverse impression, the anterior impression obsolete; elytra oblong-oval, with parallel, evenly and broadly rounded sides, obtusely rounded at apex, almost one-half wider than the prothorax, two-thirds longer than wide, depressed above, opaque, with very fine unimpressed striæ and very flat intervals. Length (♂) 11.7 mm.; width 4.2 mm. Arizona.

Differs from the following species in its more slender and more depressed form, more elongate and more opaque elytra, wholly impunctate striæ, more distinct basal transverse thoracic impression, more slender antennæ, less broadly dilated anterior tarsi of the male and in the form of the mentum tooth.

Pristodactyla zuniana n. sp.—Form rather stout, rather convex, deep black, polished, the elytra densely alutaceous; legs throughout piceo-rufous, the antennæ dark testaceous, the basal joint but little darker; head rather large, fully two-thirds as wide as the prothorax, the antennæ moderately long and slender; prothorax large, slightly shorter than wide, formed as in the preceding, except that the deep and similarly posteriorly bifurcate sublateral impressions near the base are not connected by the transverse impression, this being very feeble and not anteriorly angulate at the middle, the anterior transverse impression obsolete or barely traceable; base not truncate as in *arizonica* but broadly and feebly sinuate; elytra oblong-oval, about one-half longer than wide, only two-fifths wider than the prothorax, with parallel, broadly arcuate sides and obtuse apex, the striæ fine, scarcely at all impressed, finely, very distinctly punctate throughout, with the usual two to three small foveæ, the intervals almost perfectly flat. Length (♂) 10.4–11.8 mm.; width 4.2–4.5 mm. New Mexico (locality unrecorded).

Both the above species differ from *dubia* Lec., in having the prothorax less narrowed at base, the base in *dubia* being only about two-thirds as wide as the apex, also in the deeper latero-subbasal thoracic impressions; the transverse impressions in *zuniana* are much feebler. The mentum tooth in *dubia* is said to be narrow, with its tip very slightly emarginate. In *arizonica* the tooth is broad, subparallel, with its apex broadly and obtusely bilobed and its surface is equally and strongly canaliculate medially throughout the length. In *zuniana* it is more trapezoidal, with the two lobes of the apex pointed and the strong medial emargination angulate and continued posteriorly on the surface by a posteriorly and rapidly attenuate impression. The very distinctly punctulate elytral striæ of *zuniana* would undoubtedly have been observed by LeConte if present in *dubia*, the length of which is given as 12 mm.

***Pristodactyla semirufa** n. sp.—Small, rather slender, moderately convex, pale testaceous in color and polished, the elytra more obscure testaceous and faintly alutaceous; head large, fully three-fourths as wide as the prothorax, the antennæ only moderately slender, pale testaceous throughout; prothorax small, convex, nearly a fifth wider than long, the sides rather strongly arcuate throughout, a little more converging basally, with broadly rounded angles and rectilinearly truncate base, which is

four-fifths the maximum width and but very little narrower than the apex; surface convexly declivous almost to the lateral reflexed bead from apex to base, the latero-subbasal impressions short and very feeble, the transverse impression very feeble, the anterior obsolete, the median stria distinct; elytra oval, with broadly arcuate sides and obtuse apex, distinctly wider behind the middle than at base, nearly one-half wider than the prothorax and barely one-half longer than wide; striæ very fine, not at all punctulate, the three foveæ distinct, the intervals flat; hind tarsi much shorter than the tibiæ, the pectination of the claws short but fine. Length (♀) 8.5 mm.; width 3.2 mm. Mexico (Sierra Madre Mts., of Chihuahua),—C. H. T. Townsend.

There is no species closely allied to this, with which it can be compared. The mentum tooth is trapezoidal, flat, broadly and very faintly impressed medially except toward base, the lobes of the apex rather acutely angulate and separated by a deep angular emargination.

Rhadine Lec.

This genus should be considered valid, not so much because of modifications of special organs, as on account of its general habitus, in which feature it is sharply delimited from *Platynus*. I was abandoned by LeConte, for the reason that there seemed to be no structural character pertaining to special parts or organs that distinguishes it abruptly from *Platynus*, as for example, the dorsal modifications of the anterior tarsi; the occasional grooving of this surface is of no generic significance whatever, as it becomes completely lost in species otherwise closely allied to those possessing it, and, in one before me, it is only partially present on the first joint. The slender body, with narrow and generally much elongated prothorax, flattened upper surface and long slender legs, give the group a very peculiar appearance among the Platynids; in addition to this, the third antennal joint, although variable, appears to be somewhat constantly longer in a relative sense. The species are numerous but local in range and are not abundant individually; they are almost peculiar to the southwestern faunal regions of North America and those now in my collection, mostly represented by single examples, may be identified as follows:

Larger species always over 10 mm. in length.....2
Small species, always much less than 10 mm. in length.....8
2—Elytral striæ with distinct and comparatively coarse punctures, the intervals more or less convex; pronotum with a few scattered punctures toward the sides.....3

Elytral striæ very fine and never distinctly punctate.....5

3—Body ferruginous in color. Shining, depressed above, convex beneath; head elongate, three-fifths as wide as the prothorax, the antennæ only moderately slender and (♀) not quite half as long as the body, the third joint not quite a third longer than the fourth; prothorax a fifth to sixth longer than wide, widest but little before the middle, the sides parallel and broadly arcuate, gradually converging posteriorly, becoming parallel for a short distance before the sharply defined hind angles; base sinuate medially, transverse near the sides, fully as wide as the apex and three-fifths the maximum width; surface feebly convex, sharply but moderately reflexed at the sides, slightly flattened and transversely subrugulose basally, the median stria distinct, impressed, subentire; apical angles very obtusely rounded; elytra oval, twice as long as wide and four-fifths wider than the prothorax, the side margins very strongly reflexed, the striæ impressed, coarsely and irregularly punctate, the scutellar long, forming an even continuation of the first stria, the intervals polished and convex, impunctate; apices much prolonged and very acute; legs long and slender; hind tarsi two-thirds as long as the tibiæ, the first joint of the anterior apparently with a very faint groove at each side of the upper surface; claws long and slender. Length (♀) 13.0–14.0 mm.; width 4.3–5.0 mm. New Mexico (Fort Wingate). Three examples.....**nivalis** Horn

Body black in color, picescent beneath, the legs blackish-piceous; body smaller and much more slender, the upper surface polished throughout.....4

4—Form very moderately ventricose; head moderately elongate, three-fourths as wide as the prothorax, the neck rather abruptly formed; antennæ brownish-testaceous throughout, slender, not quite half as long as the body, the third joint about one-half longer than the fourth; prothorax oval, widest just visibly before the middle and fully a fourth longer than wide, the sides broadly rounded, subparallel, feebly converging anteriorly, more so posteriorly, becoming parallel before the angles, which are barely so much as right and very sharp; base very feebly sinuate, transverse at the sides, three-fifths the maximum width, equal to the apex, which is very feebly sinuate between the very obtusely rounded angles; surface feebly convex, broadly and feebly impressed along the sides, more so basally, the side margins acutely but narrowly reflexed, the median stria fine but deep, subentire; elytra twice as long as wide, scarcely visibly less than twice as wide as the prothorax, oval, the apices obliquely and broadly sinuate, with the tips much produced, dehiscent and very acute; margins strongly reflexed; striæ impressed, with rather regular coarsish punctures, the scutellar long, the intervals convex; legs only moderately long; anterior tarsi not grooved dorsally. Length (♂) 12.0 mm.; width 3.9 mm. New Mexico (Jemez Springs),—John Woodgate.....**umbra** n. sp.

Form slightly more abbreviated; head fully two-thirds as wide as the prothorax, the neck more gradually formed than in *umbra;* antennæ nearly similar but rather longer, half as long as the body, the third joint two-

fifths longer than the fourth; prothorax inflated more anteriorly, widest near apical two-fifths, not a fifth longer than wide, the sides more strongly rounded, the converging basal parts, base and angles nearly similar; base relatively narrower, four-sevenths the maximum width, fully as wide as the apex, which is extremely feebly sinuate between the obtuse but rather sharply marked and scarcely at all rounded angles; surface nearly as in the preceding, the side margins not quite so strongly elevated and less diaphanously rufescent; elytra similar but not so elongate and more evidently widest a little behind the middle, not four-fifths longer than wide, the apices similar but not so produced or so finely acuminate, the impressed striæ a little less coarsely and more irregularly punctured, the intervals convex, smooth, the setigerous punctures similarly difficult to trace but apparently three in number; side margins strongly reflexed and similarly thin and rufo-diaphanous; legs even more slender; two basal joints of the anterior tarsi with two fine sharp grooves separated by the broadly convex upper surface, the claws moderately long. Length (♀) 11.3 mm.; width 3.8 mm. Arizona (San Francisco Mts.),—F. H. Snow.....**sublustris** n. sp.

5—Base of the prothorax very narrow, barely half the maximum width. Body rather ventricose, feebly convex, very shining throughout, the elytra with scarcely perceptible alutaceous lustre, dark though bright testaceous, the elytra more obscure; head elongate, three-fourths as wide as the prothorax, with rather narrow and abruptly formed neck, the eyes moderate but prominent; antennæ nearly half as long as the body, slender, the third joint about a fourth longer than the fourth, both much elongated; prothorax only about a sixth longer than wide, rather inflated, widest near anterior third, the sides rounded, gradually very converging behind the middle, becoming very broadly and scarcely evidently sinuate to the basal angles, which are right, very sharp and abruptly prominent; base broadly sinuate, becoming arcuate at the sides, barely two-thirds as wide as the apex, which is broadly, distinctly sinuate between the broadly and obtusely rounded angles; surface distinctly convex, broadly, feebly concave toward the sides, more deeply basally, the edges strongly reflexed and thin, the median stria fine but strong; elytra fully three-fourths longer than wide, regularly oval, four-fifths wider than the prothorax, rather obtusely oblique and feebly sinuate at apex, the tips obtusely angulate; striæ fine, feeble, very obsoletely and irregularly sculptured, the scutellar almost effaced, the fovea however strong; intervals just visibly convex, the third with four or five punctures; side margins very strongly reflexed and rufo-diaphanous; legs long and slender, the hind tarsi almost as long as the tibiæ; basal joint of the anterior with two fine approximate dorsal grooves, meeting at base, subobsolete on the following joints; claws long, slender, arcuate. Length (♀) 11.7 mm.; width 4.0 mm. New Mexico (Cloudcroft, Sacramento Mts.),—Warren Knaus.....**dissecta** Lec.

Base of the prothorax relatively less narrowed and more or less evidently exceeding one-half the maximum width.....6

6—Elytra strongly shining; body stouter. Color blackish rufo-piceous, the elytra rather more obscure, except the thin diaphanous and strongly reflexed rufous side margins; head only slightly elongate, two-thirds as wide as the prothorax, the neck abruptly formed, the oblique sides behind the eyes not as long as the latter; antennæ moderately slender basally, thickened apically, less than half as long as the body, the third joint a third longer than the fourth; prothorax unusually broad, not at all longer than wide, widest at apical third, the sides strongly rounded, strongly converging posteriorly, becoming rather abruptly deeply sinuate near the base, thence somewhat diverging to the right and very sharp, prominent angles; base rather strongly sinuate, becoming transverse laterally, fully three-fifths the maximum width and as wide as the apex, which is rather deeply sinuate between the obtuse and rounded angles; surface somewhat convex, declivous at the sides to the strongly reflexed thin margins, along which the concavity is narrow and deep, becoming lost basally in the large and deep basal concavities, the angles appearing thereby very much reflexed; stria fine, broadly impressed, conspicuous; elytra four-fifths longer than wide, evenly suboblong-oval, feebly convex, barely three-fifths wider than the prothorax, the humeri rather more suggested than usual, the apices obliquely, strongly sinuate, the tips obtusely angulate though sharply defined; striæ fine, feebly impressed, indefinitely and minutely sculptured, the scutellar long but feeble, the intervals feebly convex, very slightly alutaceous, the third with about four small setigerous punctures; legs long and slender, the hind tarsi fully as long as the tibiæ; first joint of the anterior with two diverging dorsal grooves, starting from the middle of the base, the outer entire, the inner much abbreviated. Length (♀) 13.2 mm.; width 4.5 mm. Arizona (San Francisco Mts.),—F. H. Snow..... **constricta** n. sp.

Elytra opaque, the body notably slender. Sierra Nevada Mountains..7

7—Body, legs and antennæ bright testaceous in color, the elytra dark rufo-piceous, with the usual diaphanous reddish margins; anterior parts and under surface shining; head of the usual subrhomboidal form, three-fourths as wide as the prothorax, the eyes of the usual development and convex; oblique sides behind them much longer than the eyes; antennæ slender, filiform, rather more than half as long as the body, the third joint nearly one-half longer than the fourth; prothorax only a sixth longer than wide, widest at apical third, the sides rounded, converging posteriorly, becoming not abruptly straight and parallel for a slight distance from the angles, which are right but not at all prominent and evidently blunt or rounded; base very distinctly narrower than the apex, four-sevenths the maximum width, feebly sinuate, transversely rounded laterally; apex feebly sinuate, with obtusely rounded angles; surface feebly convex, depressed but not strongly impressed basally and with some feeble punctures near the basal angles, the median stria strong, feeble posteriorly; sides moderately and abruptly reflexed; elytra very nearly twice as long as wide, barely visibly widest posteriorly, four-fifths wider than the prothorax, the sides very oblique basally,

without trace of humeri; surface very feebly convex, the striæ very fine and finely, obsoletely sculptured, the intervals nearly flat, the third with four punctures, the sides rather strongly and very abruptly reflexed, the apices obliquely feebly sinuate, the tips not prolonged but separately angulate, the angle only moderately sharp; legs long and slender, the anterior tarsi simple, the posterior strongly grooved at the sides as usual, nearly four-fifths as long as the tibiæ. Length (♂) 11.2 mm.; width 3.75 mm. California (Truckee, near Lake Tahoe) ..... **jejuna** Lec.

Body in color, lustre and general form as in the preceding but still more slender; head more elongate, nearly four-fifths as wide as the prothorax, the neck narrower, the eyes similar; antennæ a little less slender, the third and fourth joints actually not so long but of the same relative proportion; prothorax narrower, fully a fifth longer than wide, similar in form, except that the sides are more broadly arcuate and, toward base, become only oblique and very feebly sinuate, not at all parallel near the angles, which are slightly obtuse as well as distinctly rounded; base similar but barely visibly narrower than the apex, nearly three-fifths the maximum width; surface nearly similar throughout, except that there is a feeble impression extending almost from apex to base and parallel to the side margins at a considerable distance therefrom; elytra still more nearly twice as long as wide, a little narrower, not definitely widest posteriorly, the surface and margins similar, the striæ even finer and feebler and the apices more obliquely sinuate but with each tip evenly and broadly rounded; legs and tarsi nearly similar, the hind trochanters short and with the apex very obtuse, almost arcuato-truncate. Length (♂) 11.0 mm.; width 3.5 mm. California. Labelled simply "Cal." in the Levette collection ..... **gracilenta** n. sp.

8—Head barely visibly narrower than the prothorax. Body shining and pale testaceous throughout, the elytra feebly alutaceous, rather strongly ventricose; head elongate, the eyes rather large but only moderately convex, equal in length to the oblique sides behind them; antennæ long, very slender and filiform, much more than half as long as the body, the third joint a third longer than the fourth, all the joints very long; prothorax two-fifths longer than wide, widest near apical third, the sides rounded, very gradually converging posteriorly, becoming very slightly sinuate near the basal angles, which are nearly right and moderately reflexed but not prominent or very sharp; base sinuate medially, arcuate at the sides, one-half the maximum width and three-fourths as wide as the apex, which is transverse, with the angles barely at all advanced, slightly more than right and very narrowly blunt; surface feebly convex, feebly impressed nearly throughout at some distance from the rather strongly and abruptly reflexed margins, the impressions deeper basally, impunctate, the median stria fine but strong, subentire; elytra evenly oval, widest at the middle and about two and one-half times as wide as the prothorax, nearly three-fourths longer than wide; surface very feebly convex, the striæ very fine and feeble, the intervals not quite flat, the third with four punctures, the side margins rather

feebly reflexed, the apices obliquely sinuate, the tips angulate, the angle right and sharply defined; legs long, very slender, the hind tarsi about as long as the tibiæ, the anterior (♀) very slender, not grooved dorsally. Length (♀) 9.3 mm.; width 2.8 mm. New Mexico (Las Vegas),—Meeske.....**longipes** n. sp.

Head much narrower than the prothorax.....9

9—Body, legs and antennæ pale brownish-testaceous throughout, shining, the elytra feebly alutaceous; head elongate, rhomboidal, four-fifths as wide as the prothorax, the eyes well developed; antennæ very long, slender and filiform, the second joint relatively much longer than in the preceding and distinctly more than half as long as the third, which is a third longer than the fourth; prothorax a little more than a fourth longer than wide, widest near apical third, the sides rounded, gradually converging posteriorly and becoming evidently though feebly sinuate for a considerable distance before the angles, which are slightly obtuse but very sharp and well defined; base only three-sevenths the maximum width and barely three-fifths as wide as the apex, which is broadly and evenly sinuate between the broadly obtuse and rounded angles; surface nearly as in the preceding but less impressed at the sides basally, less strongly reflexed at the sides and with a more deeply impressed median stria; elytra more elongate, evenly oval, widest at the middle, almost twice as long as wide and about twice as wide as the prothorax, the surface similar but more broadly concave and strongly reflexed at the sides, the apices a little less obliquely sinuate and the angulate tips rather more obtuse; legs long and very slender, the hind tarsi not quite as long as the tibiæ, the anterior (♀) with the long first joint feebly bistriate dorsally. Length (♀) 9.7 mm.; width 3.0 mm. New Mexico (Jemez Springs),—Woodgate.....**anthicoides** n. sp.

Body, legs and antennæ pale rufo-testaceous, shining, the elytra opaque and with a large blackish cloud occupying the entire area except laterally and more broadly toward base; head moderately elongate, three-fourths as wide as the prothorax, the eyes moderate, shorter than the oblique sides behind them; antennæ shorter than in the two preceding, though fully half as long as the body, slender basally, gradually thickened distally, the third joint nearly one-half longer than the fourth; prothorax about a fifth longer than wide, the sides anteriorly subparallel and feebly arcuate, rounding more apically, gradually converging in about basal half, becoming very broadly and feebly sinuate and oblique posteriorly, the angles obtuse and well rounded; base transverse, the sides rounded and slightly more posteriorly projecting, nearly three-fifths the maximum width and four-fifths as wide as the apex, which is evenly and feebly sinuate between the obtuse and moderately rounded angles; surface feebly convex, impunctate, feebly impressed not very near each side behind the middle, only a little more so basally, the side margins abruptly but not strongly reflexed; elytra two-thirds longer than wide, twice as wide as the prothorax, slightly more inflated posteriorly, nearly flat, rather broadly and strongly reflexed at the sides posteriorly but gradually and only finely so basally, very finely and feebly striate,

obliquely and feebly sinuate at apex, the tips each obtuse and rounded; third interval with four punctures; legs rather long and slender, the anterior tarsi obviously grooved. Length (♀) 9.0 mm.; width 2.7 mm. Mexico (Colonia Garcia, Sierra Madre Mts., Chihuahua),—C. H. T. Townsend.....***perlevis** n. sp.

Of the species pertaining to this genus which I do not have at hand, it should be said that *larvalis* Lec.—from the regions about St. Louis, Mo., but apparently very rare—has the third antennal joint as long as the next two combined and *caudata* Lec., has the alternate strial intervals of the elytra peculiarly punctate, apparently somewhat as in *Platynus hypolithus* Say. Finally, *myrmecodes* Horn, is evidently related to the small species named *longipes* and *anthicoides* above, but, though the description fits either of them tolerably well, the third antennal joint would hardly be recorded as a little longer than the fourth in either of them; it is much longer than the fourth; as the elytra are said to be nearly twice as long as wide, it may be more closely allied to *anthicoides* than to *longipes;* however, as the latter species are mutually widely distinct, the probabilities are that neither of them will prove to be the same as the Arizonian *myrmecodes.* It is probable that LeConte included several species under his very inadequately described *jejuna*, and I am not positive that the one above described under that name is precisely conspecific; it has been in my collection under that name for many years, however, and my recollection is that it was compared with the one bearing the type label in the LeConte collection. Of the Mexican species, *leptodes* Bates, differs from any above described in having the thoracic base sinuate from angle to angle and *euprepes* Bates, also from Durango, differs in the strong elytral striæ; it is about 12 mm. in length.

Olisthopus Dej.

It is almost impossible to believe that either *Feronia parmata* or *Olisthopus cinctus* of Say, can be identical with the species that is commonly known as *Olisthopus parmatus* Say, in our present lists, and yet, if not applying to the latter, they must both be considered unknown. For instance, under the description of *Feronia parmata*, the author states that the prothorax is destitute of an elevated edge and that the elytra are black-brown to the sixth stria, the margin pale rufous; neither of these characters applies to our *Olisthopus*

parmatus Say. Again, under *Olisthopus cinctus*, he writes that the lateral basal impressions of the pronotum are sparsely punctured and the elytra dull reddish-brown, whereas in our usual conception of *parmatus*, with which *cinctus* has been merged as a synonym, there is no trace of punctuation and the elytra are strongly variegated in color. However, until Say's forms can be known more definitely, it would not be worth while to overturn the prevailing notions of *parmatus* Say. The American species of *Olisthopus* are moderately numerous, those in my collection being definable as follows:

Body somewhat ventricose, the antennæ long, very slender and filiform, two-thirds to three-fourths as long as the body.....2

Body more parallel, very small in size, the antennæ much shorter, one-half as long as the body or but little more, though filiform and more or less slender.....6

2—Basal impressions of the pronotum longer, sublinear though very broadly concave and extending to basal fourth. Body narrower than in *parmatus* but similar in coloration, black beneath, with pale legs, shining throughout, the elytra barely at all alutaceous; head black, as wide as long, three-fifths as wide as the prothorax, the eyes large; antennæ fuscous, the three basal joints pale; prothorax two-fifths wider than long, the sides rounded almost evenly, widest barely before the middle, the base transverse and very moderately arcuate, the apex rather deeply sinuate, the basal angles very broadly rounded; surface piceous-black, rufescent laterally, with pale elevated marginal bead; elytra testaceous, black except at the sides and along the sutural interval in a cloud occupying rather more than posterior half and with a transverse testaceous common spot at the centre, oblong-oval, a third longer than wide, nearly one-half wider than the prothorax, together subcircularly rounded at apex, the sinuation obsolete; surface with rather strong and distinctly impressed striæ, the two lateral punctulate, the lateral series of foveæ broadly interrupted, the scutellar long, continuous with the first stria, the basal part of the latter disconnected, the fovea not distinct, the first and second punctulate basally; intervals feebly convex, the third with three punctures. Length (♂) 6.5 mm.; width 2.6 mm. Wisconsin (Bayfield),—Wickham.....**pictus** n. sp.

Basal impressions short, not extending far from the basal margin, always impunctate.....3

3—The impressions small, rounded and foveiform, the prothorax relatively large.....4

The impressions outwardly oblique anteriorly from the base and not including a rounded foveiform concavity at the base; prothorax relatively much smaller.....5

4—Body stouter, moderately convex, deep and shining black, the fine elevated marginal bead of the pronotum and the elytra and epi-

pleura testaceous, the disk of the elytra with a large black cloud in about posterior two-thirds, not extending to the sides, the sutural interval pale and with a lateral nubilous pale dilatation at about the centre; under surface black, the legs pale; head actually but not relatively larger than in *pictus*, three-fifths as wide as the prothorax, the eyes and antennæ similar; prothorax larger, more transverse, one-half wider than long, similar, except that the base is more rounded and more continuous with the sides, also more distinctly wider than the apex; elytra oblong-oval, broader, with more rounded sides and still more obtuse apex, only about a fourth longer than wide and a third wider than the prothorax, the striæ finer, much less impressed and everywhere impunctate, the intervals flat, just visibly convex internally, the apical sinuses only barely indicated. Length (♂ ♀) 6.2–7.2 mm.; width 2.8–3.2 mm. Rhode Island, Massachusetts, Pennsylvania and District of Columbia. [*cinctus* Say].

parmatus Say

A—Similar to the preceding in every way, except that it is much smaller in size, the prothorax and elytra both shorter, the former three-fifths wider than long and the latter barely a fifth longer than wide; legs a little shorter. Length (♂) 4.8–5.1 mm.; width 2.0–2.2 mm. Indiana.....**iterans** n. subsp.

Body less stout and very much smaller, piceous, the pronotum paler at the finely reflexed lateral margins and with a small nubilous pale cloud on each elytron near the suture and just behind the middle; head blackish, as wide as long, three-fifths as wide as the prothorax, the eyes large, the antennæ very slender, filiform, the joints beyond the second nearly equal in length as in the preceding species; prothorax large, parallel, one-half wider than long, the sides broadly rounded, the base broadly arcuate, somewhat lobed between the impressions, the angles very broadly rounded as usual; impressions small, deep but broadly prolonged anteriorly for some distance in a very broad and evanescent, indefinite impression; apex rather deeply sinuate from side to side; elytra oblong-oval, fully a fourth longer than wide, nearly one-half wider than the prothorax, the sides broadly arcuate, gradually oblique and straighter apically; surface not distinctly opalescent, finely striate, the striæ impunctate, all distinct, the scutellar long, forming an even continuation of the first stria, the basal part of which is detached, the fovea small but evident; intervals flat or nearly so, the third with the usual three punctures near the third and second striæ; legs slender and rather long, the hind tarsi five-sixths as long as the tibiæ. Length (♂) 4.8 mm.; width 2.1 mm. Rhode Island (Boston Neck). The single type is immature.....**innuens** n. sp.

5—Body small in size, much less broad in form, piceous-black, the elytra nubilously somewhat paler laterally and also transversely near basal fourth; under surface blackish, the legs pale; head rather longer than wide, three-fourths as wide as the prothorax, the eyes large; antennæ as in the preceding species; prothorax (♀) relatively very much smaller, nearly three-fifths wider than long, parallel, with rounded sides, the base almost circularly

rounded and continuous with the sides, the position of the angles marked by the usual strong setigerous puncture; surface broadly convex, with distinct median stria, the finely reflexed sides scarcely at all paler in color, the basal impressions broader, more indefinite and more oblique than in the preceding; apex about as wide as the base, feebly sinuate, the angles blunt but not so broadly rounded as in *parmatus;* elytra more oblong, a fourth longer than wide, the sides broadly arcuate and rather more broadly reflexed, fully two-thirds wider than the prothorax, the striæ extremely fine, impunctate, almost obsolete externally, the intervals flat, the third with the usual three punctures; apices rather broadly arcuato-subtruncate and without trace of sinuations; surface lustre feebly opalescent; scutellar fovea distinct; tarsi extremely slender, the posterior much more notably shorter than the tibiæ than in the preceding. Length (♀) 4.6 mm.; width 1.9 mm. Rhode Island. **filicornis** n. sp.

6—Form rather narrow and shining, moderately convex, piceous, the elytra but faintly variegated; head rather wider than long, two-thirds as wide as the prothorax, the eyes large, moderately prominent; antennæ slender, three-fifths as long as the body, the outer joints gradually shorter, the tenth two and one-half times as long as wide and three-fourths as long as the third; prothorax one-half wider than long, evenly rounded at the sides, the base broadly arcuate, truncate or subsinuate medially, as wide as the apex, which is feebly sinuate; basal angles very broadly obtuse and rounded; surface moderately convex, finely reflexed at the sides, feebly striate, the impressions very small, rounded and basal; elytra oblong, fully a fourth longer than wide, two-fifths wider than the prothorax, the sides parallel and broadly arcuate, the combined apices almost evenly rounded; surface and striæ almost as in the preceding, except that there is no evident opalescence; legs and tarsi extremely slender, the posterior tarsi much shorter than the tibiæ. Length (♂) 3.5 mm.; width 1.4 mm. Louisiana (Alexandria). A single rather immature example. . . . . **pusio** n. sp.

Form nearly similar, shining, piceous-black, the pronotum feebly pallescent toward the periphery, the elytra colored almost as in *parmatus*, but with the short transverse pale sutural spot more posterior in position and evidently behind the middle; under surface rufo-piceous, the legs pale; head as long as wide, with well developed eyes, three-fifths as wide as the prothorax; antennæ scarcely more than half as long as the body, less slender than usual, the joints much shorter, gradually decreasing, the tenth about twice as long as wide; prothorax three-fifths wider than long, the sides rounded and with a fine reflexed margin, the general outline of the sides and base as in *parmatus*, the impressions very small, foveiform and very near the basal marginal bead, which is broadly interrupted medially; elytra a fourth longer than wide and nearly a third wider than the prothorax, throughout nearly as in *parmatus;* tarsi unusually short, the posterior scarcely more than two-thirds as long as the tibiæ. Length (♀) 3.7 mm.: width 1.4 mm. Illinois. . . . . **brevicornis** n. sp.

Micans of LeConte, described from Georgia and said to be very rare, may possibly be redescribed above under the names *filicornis* or *innuens;* it is said to be 4.7 by 1.75 mm. in dimensions and the elytra with cyaneous reflection, which is not apparent in *innuens.* If the striæ in *micans* were as in *filicornis*, they would almost certainly have been described as obsolescent except suturally. The basal impressions of the pronotum in *micans* are said to be small, rounded and scarcely conspicuous, which would not suit the broad oblique impressions of *filicornis* at all, but is rather more suggestive of *innuens* and *pusio;* the latter, however, is much smaller and neither of them have any distinct metallic lustre on the elytra. In view of the plurality of species in the genus and the wide difference in habitat of *micans*, *innuens*, and *filicornis*, I will leave the species as here announced for the present. *Iterans* is probably a distinct species and not a subspecies of *parmatus;* but, in view of the very great similarity in nearly all features except size, it would be a rather more conservative course perhaps to annc ince it as a subspecies provisionally.

Atranus Lec.

The following is allied to *pubescens* Dej., but is smaller and of different coloration:

Atranus pallescens n. sp.—Rather slender, pale brownish-testaceous in color, the head more obscure, shining, clothed not very densely with short inclined pale hairs; head as in *pubescens* but narrower and with less prominent eyes, the antennæ not quite so long, with the joints becoming shorter apically; prothorax relatively larger though more narrowed basally, the base rather less oblique at the sides, the angles obtuse; surface almost similar, except that the basal impressions are smaller, shorter and more lineiform, barely as long as wide and very much wider than the head; elytra narrower and barely twice as wide as the prothorax but otherwise nearly similar, the strial punctures rather coarser; under surface and legs testaceous, the prosternum more obscure and the head blackish. Length (♂) 5.0–5.4 mm.; width 1.8–1.9 mm. Philadelphia (Fairmount Park). Two examples.

This species differs from *pubescens* in its smaller size, more slender hind body but broader prothorax, the elytra being distinctly more than twice as wide as the prothorax in that species, in its narrower head, less elongate antennæ and rather less prominent eyes. The types have been undescribed in my collection for about thirty years.

Philophuga Mots.

This genus is said by G. H. Horn to be closely allied to *Calleida*, differing only by the fourth tarsal joint being emarginate and not bilobed; but others, and among them Chaudoir and Bates, regard the two genera as being much less closely related—in fact assignable to different groups. The difference in form of the fourth tarsal joint is certainly a very important and radical character, but I have not given the "Troncatipennes" sufficient general study to warrant any decided opinion at this time. The tarsal claws are strongly pectinate as in *Cymindis* and *Calleida*. Our species, omitting *castanea* Horn, which can be recognized readily by its marked difference in color, being castaneous and not blue or green as is always the case in the others, may be identified by the following short comparative diagnoses:

Elytra more elongate, never less than a third to two-fifths longer than wide and only feebly or moderately narrowed basally.....2

Elytra shorter, a fourth longer than wide or but slightly more and more narrowed basally, the body smaller in size.....5

2—Prothorax distinctly wider than long, the elytral striæ deep, the intervals convex. Blue-green in color, shining and metallic in lustre, the antennæ black, the first three joints each with a small ferruginous spot beneath; head feebly rugose and punctate at the sides, the frontal impressions broad, short and oblique; prothorax wider than long, convex, subcordate, the sides rounded, the base retracted; lateral margin finely reflexed, broader posteriorly, the hind angles feebly elevated, obtuse; base obliquely truncate at the sides; surface with the transverse impressions and median stria deep, transversely rugulose, obsoletely on the disk, the base punctate and with a few punctures anteriorly; elytra subconvex, subparallel, the humeri rounded, the apices rectilinearly truncate, the striæ deep, punctate, the intervals convex and with small sparse punctures; legs black. Length 9.4 mm.; width 4.6 mm. Colorado (near Long's Peak). [*horni* Chd.]..... .....**amœna** Lec.

Prothorax about as long as wide, the elytral striæ fine or shallow, the intervals flat.....3

3—Sides of the prothorax strongly sinuate posteriorly, becoming nearly parallel and straight toward the angles, which are but little more than right and bluntly rounded. Body smaller than usual in this section, pure deep blue in color throughout and only moderately shining above, greenish-blue and metallic beneath, the legs black; head slightly narrower than the prothorax, not strongly, sparsely punctate, impunctate medially, the antennæ black, the three basal joints pale, the first black along its entire upper surface, the second and third with an apical black spot above; prothorax slightly wider than long, the sides rounded, converging and sinuate posteriorly, the

base almost truncate, being only very feebly arcuate from side to side, three-fourths the maximum width and four-fifths as wide as the apex, which is rectilinearly truncate from side to side; surface punctured basally and near the apex and with fine transverse rugulation throughout the width, convexly declivous laterally to the fine reflexed margin, along which there is a broad impression which is feeble medially, becoming deep at base, the angles not much reflexed; elytra not quite one-half longer than wide, distinctly broadest and inflated posteriorly, where they are two and a fourth times as wide as the prothorax, the apical truncatures feebly oblique and straight; humeri distinct, rounded; striæ very fine, not at all impressed and finely, rather closely punctate, the intervals with single more or less irregular series of extremely fine and feeble punctures, the third with two punctures. Length 8.0 mm.; width 3.0 mm. Texas..... **canora** n. sp.

Sides of the prothorax oblique and at most feebly and very gradually sinuate basally, the angles very obtuse.....4

4—Body larger and broader than in the preceding, bright blue or green, sometimes blue, with the head and prothorax vivid green; surface much more shining; head broader, sometimes barely narrower than the prothorax, sparsely punctate; antennæ nearly similar but a little less slender; prothorax nearly similar in general form and sculpture, except that the transverse rugulosity is coarser and deeper, the base much more arcuate and the apex very feebly sinuate; basal angles very obtuse, slightly reflexed and sharply defined; elytra broader, not so inflated posteriorly and less narrowed thence to the base, the apices more sinuously truncate, the striæ, intervals and punctuation nearly similar, the lustre however much more shining; under surface metallic green or blue, the legs black. Length 8.3–9.0 mm.; width 3.0–3.7 mm. Texas, Colorado and Mexico. [*subcordata* Chd.]. **viridicollis** Lec.

Body rather less elongate, moderately convex, not quite so shining, deep violaceous-blue throughout above and beneath, varying to greenish-blue, the legs black; head broader, barely narrower than the prothorax, the neck broader; punctures sparse and feeble; antennæ nearly similar; prothorax small, fully as long as wide to a little wider, the sides broadly rounded anteriorly, thence converging and very broadly, just visibly sinuate to the angles, which are very obtuse, slightly blunt and distinctly reflexed; base feebly, very evenly arcuate from angle to angle; surface and general features nearly as in *viridicollis*, except that the sides are broadly and more deeply impressed, the impression obsolete only apically, the basal angles more blunt and the base relatively somewhat narrower; elytra evidently shorter, nearly similar, except that the striæ are less fine, more impressed and with the punctures stronger and still more close-set, the intervals less shining and with much less fine, more numerous and more broadly confused punctures, the interstitial punctures in *viridicollis* being extremely fine and feeble and arranged in more or less evident irregular single series. Length 8.7–9.0 mm.; width 3.2–3.3 mm. Arizona..... **cærulea** n. sp.

5—Sides of the prothorax gradually very sinuate basally, the angles scarcely more than right and sharply defined. Body only moderately stout, rather convex, strongly shining and bright green, sometimes bluish; under surface more obscure metallic green, the legs black; head not so elongate as in the preceding section, the eyes well developed, the antennæ shorter but similarly colored, the three pale basal joints being partially black above; prothorax distinctly wider than the head, a very little wider than long, the sides rounded, the base broadly, evenly arcuate, only slightly narrower than the apex, which is evenly though but just visibly sinuate; surface broadly, evenly convex almost to the finely reflexed lateral margins, with a basal impression near each angle, prolonged obliquely forward parallel with the sides and gradually evanescent; punctures fine and sparse throughout, coarser apically and basally, the rugulosity almost obsolete; elytra a fourth longer than wide, not quite twice as wide as the prothorax, inflated apically, much narrowed basally, the humeri distinct, rounded, the surface sparsely but strongly, unevenly punctate and somewhat rugose, the striæ fine, feebly impressed and finely, not very closely punctate; besides the ordinary punctures of the intervals, there are some widely scattered, which are notably larger, especially on the third, fifth and seventh intervals. Length 7.3–7.6 mm.; width 2.6–2.9 mm. California. [*cyanea* Mots.]..... **viridis** Dej.

Sides of the prothorax oblique but only very broadly and but just visibly sinuate, the angles broadly obtuse; hind body relatively broader. .6

6—Form rather strongly ventricose, moderately convex, very shining, bright bluish-green, the elytra rather more bluish, the under surface more obscure blue-green, the legs black as usual; head moderate though but barely narrower than the prothorax, the eyes large and prominent, the surface with a few fine feeble scattered punctures toward the sides, the eyes rather more convex than in *viridis*, the antennæ slightly more elongate; prothorax small, slightly wider than long, the sides rather strongly rounded anteriorly, the basal angles very obtuse, not evidently reflexed but narrowly deplanate and not rounded; base transverse, oblique at the sides, very distinctly narrower than the apex; surface convex, finely, transversely and sparsely strigilate, the punctures scarcely evident except toward the periphery, having at base near each side a large and very deep rounded impression, not prolonged anteriorly; elytra a fourth longer than wide, barely twice as wide as the prothorax, inflated posteriorly, the apices transversely and rectilinearly truncate, with very broadly rounded external angles, the humeri much rounded; striæ extremely fine, not evidently impressed and with very fine, well separated punctures, the intervals nearly flat, barely at all undulated and with very sparse, excessively fine and scarcely discoverable punctures. Length 7.2 mm.; width 2.8 mm. California—Levette collection.

lauta n. sp.

Form nearly similar but with relatively less narrow head and prothorax, moderately convex, shining, the elytra very faintly alutaceous, deep violaceous-blue, the anterior parts tinged with green, the under

surface shining blue-green, the legs black; head proportioned and punctured nearly as in the preceding, the antennæ similarly colored but notably stouter; prothorax more distinctly wider than the head, evidently wider than long, similar throughout to the preceding, except that the base is relatively broader and equal to the apex, and that the surface laterally is much more strongly and closely rugose in transversely anastomosing folds, the basal impressions nearly similar and not anteriorly prolonged but broader, less sharply or deeply impressed and more rugosely punctured; median stria deep and conspicuous between the very feeble transverse impressions; elytra a little more than a fourth longer than wide, similarly inflated posteriorly and much narrowed basally, four-fifths wider than the prothorax, the apices more sinuato-truncate, with the external angles less broadly rounded; striæ moderately fine, feebly impressed and finely but strongly, very closely punctate, the intervals very nearly flat and smooth, shining and with extremely fine, widely and irregularly scattered punctures, which however are more easily observed than in *lauta;* two punctures of the third interval distinct; scutellar stria long and forming the oblique basal part of the first stria as usual. Length 6.8 mm.; width 2.7 mm. Colorado (Boulder Co.).....**puella** n. sp.

The only two species described above that are in any way mutually very closely allied are *viridicollis* and *cærulea;* the prothorax is very evidently more narrowed at base and more impressed laterally, and the elytra more strongly sculptured and slightly more abbreviated, in the latter, and there is a decided difference in the scheme of interstitial punctuation, the punctures in *viridicollis* being extremely small and feeble and arranged in irregular single series, while in *cærulea* they are much stronger, more numerous, though sparse, and are more irregularly scattered over the entire surface. Whether or not *cærulea* may be the true *subcordata* of Chaudoir, however, I have no means of knowing, but am of the opinion that they are not the same, in view of the very local range of species in the Arizona region, with its sharply separated and isolated mountain systems. The above description of *amæna* Lec., is drawn from the original, as I do not possess an example of that species. It is distinguished principally by the unusually transverse prothorax, deep elytral striæ and convex intervals; the coloration of the three basal joints of the antennæ, as recorded by the author, is also quite different from the usual type, as stated above under *canora.*

Calleida Dej.

The following species is to be placed near *viridipennis* Say:

Calleida striata n. sp.—Anterior parts slender when compared with the hind body, moderately convex and shining, black, the head and pronotum with rather obscure violaceous lustre, variegated with metallic green, of which a vitta parallel to and not very near the thoracic margin from apex to base is especially noticeable; elytra vivid green, gradually with feebly cupreous lustre broadly toward the sides; head as wide as the prothorax and distinctly longer, the sides long and gradually oblique behind the eyes; antennæ slender, obscure, the first three joints pale; prothorax slightly longer than wide, nearly as in *viridipennis* but much more broadly and feebly rounded at the sides, the latter less converging basally, the angles rounded and the base subequal in width to the apex; elytra similar in shape but rather less elongate and more narrowed from posterior third to the base, two and one-half times as wide as the prothorax, the striæ fine, obsoletely and irregularly sculptured or punctulate and deeply impressed, the intervals notably convex, especially toward the sides, not visibly punctate but much more strongly micro-reticulate than in *viridipennis*, the third with the usual two setigerous punctures; under surface metallic green; legs black, the tarsi finely sulcate above, the fourth joint deeply bilobed. Length 8.8 mm.; width 3.2 mm. Florida (locality unrecorded).

Differs from *viridipennis* in its narrower form, coloration, deeper striæ, more convex and subalutaceous intervals, relatively narrower base of the elytra and many other features.

Cymindis Latr.

Some of the synonymy proposed by the late Dr. Horn in this genus is unaccountable, even aside from the well known taxonomic idiosyncrasies of that author. For example, the small *brevipennis* of Zimmermann, is not only said to be the same as *planipennis* Lec., but is made the type of his description of the latter. These species are as widely separated as any two in the section of the genus having broadly reflexed thoracic margins and resemble each other in scarcely any respect whatever. *Planipennis* is one of the largest species and seems to be rare; I am fortunate enough to find a single example in my collection, taken in Colorado; it would weigh fully as much as six average individuals of *brevipennis*. Again *venator* Dej., does not seem to be the same as *americana*, as shown by the male sexual characters, at least of species so identified below, and *abstrusa* Lec., is not exactly *cribricollis* Dej., though these mistakes are more excusable. *Cribricollis* is however not very definitely

determinable; the recorded characters are unusually indeterminate, for the descriptions of Dejean seldom betray any lack of clearness or precision, and I have been obliged to select from a number of closely allied forms, one that seems to best fit his definition. Our species are rather more numerous than hitherto supposed but are difficult to differentiate very satisfactorily by description; however, the following table may prove of some aid in identification:

Prothorax transverse, with the side margins more or less broadly reflexo-explanate 2

Prothorax about as long as wide, more convex and with the side margins only very finely reflexed 17

2—Body intense black throughout and virtually glabrous, the legs black. Lustre above highly polished throughout, the elytra not in the least alutaceous; head nearly as wide as long, evidently narrower than the prothorax, the eyes large and prominent; palpi and antennæ rufo-piceous, the latter slender; front with a few fine sparse punctures, except medially, and some long rugæ near the eyes; prothorax fully a third wider than long, the sides rounded anteriorly, moderately converging, oblique and straight posteriorly to the angles, which are very obtuse but minutely subprominent; base broadly, strongly arcuate, as wide as the slightly less sinuate apex; surface with extremely minute, remote and scarcely visible punctures, becoming more distinct toward the periphery, more broadly toward the basal angles, with a feeble rounded impression at base at about outer fourth, the lateral margins rather broadly concave, the edge reflexed; elytra about a third longer than wide, three-fifths wider than the prothorax, distinctly wider posteriorly than at base, the striæ rather fine but impressed, finely and closely punctate, the intervals moderately convex, each with a single irregular series of widely spaced punctures, which are barely visibly larger than those of the striæ; scutellar stria long; apices broadly sinuate externally; legs and tarsi black, the tarsi beneath, and the tibiæ apically, with numerous coarse fulvous hairs; male with two short feeble parallel impressions at the apex of the abdomen. Length (♂) 9.5 mm.; width 3.7 mm. Mexico (Tres Marias, Morelos),—Wickham.

***atrolucens** n. sp.

Body piceous to blackish, sometimes variegated with paler, the legs always pale 3

3—Head and disk of the prothorax concolorous with the elytra 4

Head and prothorax throughout paler than the elytra, or at least the major part of the elytra, the latter sometimes pale basally, having only about two setigerous discal punctures situated on the third interval 14

4—Pronotum with very sparse and rather fine punctures, a little larger and less sparse toward the periphery; elytra with about four setigerous punctures on the third interval 5

Pronotum with coarser punctures, more close-set and generally more even in distribution 6

5—Body only feebly convex, varying unusually in size, shining, blackish-piceous, the sides of the prothorax, flanks of the elytra nubilously, epipleura, median parts of the sterna and the legs paler, testaceous; surface with rather short stiff sparse pale hairs; head rather closely and strongly punctured, except the median parts of the front; antennæ moderate, fuscous, paler basally; prothorax a fourth to nearly a third wider than long, nearly as in *cribricollis* in general character but with the punctures much smaller and very sparse; elytra oblong-oval, slightly widest posteriorly, the sides broadly rounded, about a third longer than wide and two-thirds wider than the prothorax, which is relatively smaller than in *cribricollis* and less transverse; apices obliquely sinuato-truncate; surface smooth and shining, the striæ fine but rather strong, very finely and closely punctulate, the intervals nearly flat, each with a very irregular single series of sparse impressed punctures, which are distinctly larger than those of the striæ, the third alone apparently having three or four slightly larger setigerous punctures. Length (♂ ♀) 8.2–11.0 mm.; width 2.9–3.9 mm. Mexico (Colonia Garcia, Sierra Madre Mts., Chihuahua),—C. H. T. Townsend. . .***uniseriata** Bates

Body narrower and rather more convex, paler rufo-piceous in color throughout, the legs and antennæ still paler, shining, the elytra rather opaque in the female, alutaceous in the male; hairs short, stiff, fulvous, in single series on the strial intervals; head strongly, sparsely punctured, broadly toward the sides, three-fourths as wide as the prothorax, the antennæ two-thirds as long as the body, slender and filiform; prothorax two-fifths wider than long, widest near apical third, formed nearly as in *cribricollis*, with broadly concave and reflexed side margins and feebly prominent obtuse basal angles, the surface however more broadly and evenly convex, not very coarsely but strongly, very sparsely punctate, broadly transversely impressed and more coarsely, closely and subrugosely punctured near the base, the median stria fine but rather impressed, not entire; elytra two-fifths longer than wide, about one-half wider than the prothorax, slightly broadened posteriorly, the apices broadly, evenly arcuate, becoming straight or very faintly sinuate only near the broadly rounded outer angles; striæ excessively fine and faint, not at all impressed and extremely finely, not at all closely punctulate, the flat intervals each with a single very irregular series of very fine and feeble punctures, not differing much from those of the striæ, the third, fifth and seventh with a series of slightly larger setigerous punctures, about four in number on each; male with a small rounded impression at each side of the middle at the apex of the last ventral segment. Length (♂ ♀) 8.2–9.0 mm.; width 3.0–3.3 mm. Utah (Marysvale),—H. F. Wickham. . . .**evanescens** n. sp.

6—Elytra broadly, obliquely arcuate at apex, not at all sinuate and with very broadly rounded outer angles; intervals three, five and seven each with about four setigerous punctures; pronotum more broadly and evenly convex throughout the width. 7

Elytra feebly obliquely sinuato-truncate at apex, the third interval alone

with about three setigerous punctures; pronotum more convex medially, rather less obviously so in *unicolor*.....9

7—Elytra longer, about a third longer than wide. Form rather stout, moderately convex, piceous-black, the pronotal and elytral reflexed margins, epipleura, under surface except laterally and the legs, pale testaceous; pubescence not close but rather long and stiff, pale yellowish; head coarsely, rather closely punctate, except the median parts of the front, distinctly narrower than the prothorax, with broad neck and only moderately prominent eyes; antennæ (♀) long, slender, pale in color, fully half as long as the body; prothorax about one-half wider than long, the sides somewhat irregularly rounded anteriorly, convergent and straighter posteriorly to the rather prominent though obtuse angles; base broadly arcuate, distinctly narrower than the apex; surface very coarsely, rather closely punctate, sparsely so medially, where minute sparse punctures are also more or less obvious; sides only moderately broadly reflexed; elytra distinctly wider posteriorly than at base, two-thirds wider than the prothorax, feebly alutaceous, especially in the female, the striæ very fine, unimpressed, even and finely, rather closely punctulate, the flat intervals with confused sparse punctures which are similar to those of the striæ; male with the last ventral evenly, circularly rounded and having, posteriorly on the disk, a very feeble obtuse carinule. Length (♂♀) 11.0–11.5 mm.; width 3.8–4.1 mm. Arizona (locality unrecorded).....**arizonensis** Schf.

Elytra distinctly shorter, about a fourth longer than wide.....8

8—Form, size and coloration nearly as in the preceding but rather narrower; head similarly well developed, with broad neck and still larger though only moderately prominent eyes, the punctures not quite so coarse and more widely separated; antennæ (♀) pale, long and slender, almost half as long as the body; prothorax less transverse, but little over a fourth wider than long, the outline nearly similar, except that the basal angles are more prominent, right and sharp, the short sinus before them decidedly deep and the base relatively wider though evidently narrower than the apex, the apical angles similarly very broadly rounded; surface with coarse and deep though rather well separated punctures, a little sparser medially but not intermingled very evidently with remote punctules, the sides rather more broadly deplanato-concave, the edge less strongly reflexed; elytra oblong-oval, only just visibly widest subposteriorly, one-half wider than the prothorax, the striæ fine and finely punctate but a little stronger than in the preceding, the intervals very faintly convex, more shining, with the confused punctures somewhat less sparse and a little stronger; inclined hairs slightly more numerous and much shorter. Length (♀) 11.0 mm.; width 3.9 mm. Colorado. Levette collection.....**laticollis** Say

Form still narrower, the size much smaller; color piceous but slightly less blackish, similarly pallid at the margins and beneath; hairs stiff, rather numerous, pale yellowish and much longer than in *laticollis;* head notably smaller, with narrower neck, similar eyes and closer and coarse punctures, which are wanting antero-medially; antennæ

pale, rather shorter than in either of the preceding; prothorax two-fifths to nearly one-half wider than long, throughout nearly as in *arizonensis* but with the coarse punctures more numerous and less irregularly disposed; elytra almost as in *laticollis* throughout and evidently shining in both sexes, the striæ still slightly finer and similarly minutely punctate, the intervals flat or virtually so, with fine and evidently less numerous confused punctures, each bearing a much longer stiff hair, those of the fourth and sixth intervals sometimes displaying a tendency to arrangement in a single irregular line; fifth ventral in the male having a small and shallow but very distinct apical sinus, which is perfectly constant in the four males at hand, the surface apically sometimes with a very broadly obtuse faint raised axial line. Length (♂ ♀) 9.8–10.5 mm.; width 3.5–3.75 mm. Arizona (Benson),—Dunn and also New Mexico.

zuniana n. sp.

9—Seventh elytral stria impressed and similar to the others or but slightly feebler. Body not stout, very moderately convex, rufo-piceous in color, the side margins, under surface, except the blackish margins and sides of the abdominal segments, and the legs, still paler; head well developed, the neck wide, the eyes only moderate in size or prominence; punctures very coarse, deep, rather close-set, largely wanting antero-medially; antennæ rather long and slender; prothorax two-fifths wider than long, the sides very evenly rounded anteriorly, converging, becoming gradually feebly and broadly sinuate posteriorly to the obtuse though slightly prominent angles; surface nearly even, coarsely, rather closely, somewhat unevenly punctate, the sides very broadly concave, strongly reflexed and diaphanous as usual, the general form as in *cribricollis;* elytra a little longer than in that species but otherwise nearly similar in form, the striæ notably coarser and deeper, especially in the female, with the punctures everywhere more close-set and confined to the limits of the striæ, the intervals very feebly convex and with numerous punctures, irregularly but not densely disposed and rather smaller than those of the striæ; fifth ventral (♂) almost evenly rounded behind, the surface longitudinally convex and with a very short faint raised axial line at tip. Length (♂ ♀) 9.5–9.8 mm.; width 3.4–3.5 mm. New Mexico. . . . . **acomana** n. sp.

Seventh stria unimpressed, very feeble and sometimes almost obliterated 10

10—Sides of the pronotum only moderately broadly but rather more abruptly reflexed, the pronotal punctures slightly less coarse. Color blackish-piceous throughout above, except, as usual, at the side margins, the under surface varying from almost entirely black to almost completely pale; head rather short, with only moderately wide neck and prominent eyes, the punctures coarse, larger than those of the pronotum and rather close-set; antennæ testaceous, rather slender; prothorax in outline nearly as in *cribricollis* but more evenly convex from side to side and with evidently less coarse though equally close-set punctures; elytra narrower, more than two-fifths longer than wide, three-fifths wider than the prothorax, the striæ fine (♂) but

sometimes coarser and distinctly impressed (♀), finely, not very closely punctate, the punctures confined to the striæ except basally; intervals flat to slightly convex, the punctures confusedly arranged, rather close-set and coarse, being much larger than those of the striæ; concave side margins very distinct; male characters nearly as in the preceding. Length (♂♀) 9.0–9.5 mm.; width 3.2–3.3 mm. A single pair, unlabeled in the Levette collection but probably from Colorado. [*?hudsonica* Lec.]..... **unicolor** Kirby

Sides of the pronotum very broadly concave and gradually very strongly reflexed, the punctures always notably coarse, moderately close-set and more or less irrregular in distribution, the reflexed part of the sides very thin, diaphanous and testaceous with the punctures very coarse but sparser.....11

11—Gutter forming the elytral margins strong and conspicuous; body larger and broader, the coloration nearly uniform.....12

Gutter unusually fine though evident; body smaller and narrower, the elytra more or less variegated with paler tint.....13

12—Elytra shining in both sexes. Color blackish-piceous, the margins pale, the under surface paler medially, the legs piceo-testaceous; pubescence rather short, coarse, yellowish; head relatively rather small but not much narrowed at the neck, the eyes prominent; antennæ testaceous, slender; punctures very coarse, close-set; prothorax large and transverse, fully one-half wider than long, rounded almost evenly at the sides, which rapidly converge, becoming slightly sinuous posteriorly, the angles right, prominent and sharp; base feebly arcuate, as wide as the apex, which is broadly, rather deeply sinuate, with rounded angles; punctures coarse, deep and rather close-set, the median stria very fine and inconspicuous; elytra not quite a third longer than wide, only about two-fifths wider than the prothorax, slightly inflated posteriorly, the striæ fine, shallow, having unevenly spaced punctures which are generally notably wider than the striæ, the flat intervals with irregularly scattered and very fine punctures, much smaller than those of the striæ; male with a very faint and rather broad sinuation at the apex of the rounded last ventral segment. Length (♂♀) 8.5–9.2 mm.; width 3.5–3.8 mm. Lake Superior; also New York (Lake Champlain). [*reflexa* Lec.]..... **cribricollis** Dej.

A—Similar in size and external form to *laticollis* but with the elytra shining; general characters as in *reflexa* (*cribricollis*) but larger, with broader elytra and less coarsely punctured head and prothorax, the latter also more narrowed behind and with the posterior angles less obtuse. Length 10.2 mm. Washington State. **abstrusa** Lec.

Elytra strongly alutaceous at least in the female. Color blackish-piceous, the under surface pale piceo-testaceous, more obscure at the sides, the prosternum and propleura blackish; hairs rather short, numerous and of an unusually dark fulvous tint; head nearly as in the preceding but relatively larger, the punctures very coarse but not so close-set; antennæ dark testaceous, long, slender and filiform, rather more than half as long as the body; prothorax relatively much

smaller than in *cribricollis*, not quite one-half wider than long, in outline nearly as in *cribricollis* but more narrowed at base, the latter evidently narrower than the apex; punctures slightly less coarse than in the preceding and evidently smaller than those of the head; elytra fully a third longer than wide, evenly oblong-oboval, being moderately and very gradually inflated posteriorly, fully two-thirds wider than the prothorax; side margins finely testaceous as usual; striæ rather fine, very even, the punctures rather strong, unevenly spaced but not or only slightly exceeding the striæ in width, the seventh stria obliterated but represented by a regular series of distinct punctures; intervals nearly flat, with the punctures irregularly disposed, small, rather more distinct than in *cribricollis* though much smaller than those of the striæ, about as numerous as in that species. Length (♀) 10.5 mm.; width 3.75 mm. Colorado (Boulder Co.).....**rupimontis** n. sp.

13—Form less broad than in *cribricollis*, the size smaller, feebly convex, strongly shining throughout, blackish-piceous, the under surface and legs nearly as in *rupimontis*, the elytra very gradually becoming testaceous laterally and basally; hairs nearly as in *cribricollis;* head comparatively small, nearly as in the latter species throughout, except that the neck is somewhat narrower, the antennæ similar; prothorax nearly similar throughout; elytra fully a third longer than wide and two-fifths wider than the prothorax, the striæ and intervals nearly similar; male with fully the posterior half of the last ventral abruptly totally devoid of punctulation, in a way not evident in the male of *cribricollis*. Length (♂) 8.4 mm.; width 3.2 mm. British Columbia (Caribou District).....**marginata** Kirby

Form moderately slender, somewhat more convex, piceous-black, the elytra rufo-piceous, gradually testaceous toward the humeri; under surface blackish, paler medially, the legs pale; pubescence scanty, stiff, yellowish, moderately short; surface very shining throughout; head rather small, with unusually narrowed neck and very prominent eyes, the punctures very coarse, deep, close-set, broadly wanting antero-medially; antennæ slender, testaceous; prothorax throughout nearly as in *cribricollis*, except that the apex is relatively narrower, the base being decidedly broader than the distance between the broadly rounded apical angles, the punctures also are rather less close-set; elytra also very nearly as in *cribricollis* but narrower and with the outer angle at apex much more broadly and less abruptly rounded; striæ and general punctuation even finer and more superficial; male with the last ventral as in *cribricollis*. Length (♂) 9.5 mm.; width 3.3 mm. New Hampshire (White Mts.).
alticola n. sp.

14—Larger species, not under 10 mm. in length, the elytral sculpture very fine and feeble.....15

Small species, much under 10 mm. in length, the elytral sculpture strong.....16

15—Form stout, very moderately convex, shining throughout in both sexes, piceous, the head and prothorax but slightly paler and more rufous than the elytra, which are sometimes very faintly paler

basally; hairs very short, pale and easily denuded; head well developed, with rather large but not very prominent eyes, finely, sparsely punctate, rugose antero-laterally; antennæ fusco-testaceous, only moderately long; prothorax one-half wider than long, the sides almost evenly rounded from apex to base, the angles very obtuse, rounded, with a very small faint sinus immediately before them; base about as wide as the apex, very broadly lobed, the lobe broad but distinct, the sides laterally feebly oblique and broadly rounded; apex slightly sinuate, the angles broadly rounded; surface with a rather deep subbasal impression at each end of the lobe, not evident in any of the preceding forms and obsolete inwardly very near the middle, very broadly concave and moderately reflexed and diaphanous at the sides; punctures fine, very sparse, more distinct and closer peripherally; elytra but feebly convex, two-fifths longer than wide, slightly wider subposteriorly than at base, fully two-thirds wider than the prothorax, obliquely sinuato-truncate at apex, the striæ very fine, barely at all impressed, very minutely and closely punctulate, the intervals nearly flat, with rather sparse and very fine, irregularly distributed punctures, which are even smaller than those of the striæ, the latter almost invisible under transverse illumination; legs rather short, pale, the under surface testaceous, the abdomen blackish peripherally. Length (♀) 12.0 mm.; width 4.8 mm. Colorado. New Mexico—LeConte.....**planipennis** Lec.

Form stout, moderately convex, shining, the elytra (♀) slightly alutaceous; color pale testaceous, the elytra piceous, shaded very feebly, paler basally and near the sides; under surface and legs as in the preceding; head moderate, very finely, feebly and remotely punctulate, feebly rugulose antero-laterally, the antennæ filiform and testaceous but rather stout and barely longer than the head and prothorax in the female; prothorax about two-fifths wider than long, the sides rounded anteriorly, oblique and converging posteriorly, becoming nearly straight, the basal angles sharply marked and slightly prominent; base as in the preceding but relatively a little wider than the apex, which is more feebly sinuate, with the angles better marked and less rounded; surface rather less broadly but more deeply concave and strongly reflexed laterally, the basal impressions similar but much feebler, the punctures altogether obsolete discally, but becoming fine and rather close in the lateral and basal impressions, the surface throughout with some very feeble transverse rugosity; elytra more than two-fifths longer than wide, three-fourths wider than the prothorax, feebly inflated subposteriorly, the striæ extremely fine, not at all impressed and composed of a close succession of very fine shallow punctures, the flat intervals with the punctures very sparse, irregular and so minute and feeble as to be discoverable with difficulty, apparently tending to irregular single series. Length (♀) 10.3–10.8 mm.; width 4.0–4.1 mm. Arizona (Douglas, Cochise Co.),—F. H. Snow. Three examples. **blanda** n. sp.

16—Body not very stout, moderately convex, shining, testaceous, the elytra black, with feeble metallic lustre, abruptly rufous along the

sides and in a well defined humeral spot; abdomen only very slightly obscure peripherally; hairs short, stiff, yellowish; head rather small, with somewhat more prominent eyes than in the preceding two forms and differing very radically in being coarsely, deeply and rather closely punctate, except antero-medially, the antero-lateral rugosity extremely fine and feeble; antennæ longer and much more slender than in *blanda* but nearly as in *planipennis;* prothorax two-fifths wider than long, the sides rather unevenly rounded, converging posteriorly, becoming feebly sinuate toward the basal angles, which are very sharp and prominent; base subevenly and feebly arcuate, much narrower than the apex, which is sinuate, the angles broadly rounded; surface coarsely, very deeply, irregularly but on the whole not very closely punctate throughout, only moderately concave and reflexed at the sides and much more narrowly than in either of the preceding, the basal impressions broad, feeble and diffuse as usual in the *cribricollis* type; elytra only about a fourth longer than wide, almost parallel, being but very slightly broader behind the middle than at base, two-fifths, or slightly more, wider than the prothorax, the striæ very distinct, strongly, rather closely punctured and feebly impressed; intervals feebly convex, finely but strongly, rather sparsely and irregularly punctate, the punctures a little smaller than those of the striæ, the two punctures of the third interval indistinct. Length (♂) 8.0–8.3 mm.; width 2.8–2.9 mm. Kansas. [*cribricollis* Lec. nec Dej., and *planipennis* Horn nec Lec.]. Three examples..... **brevipennis** Zimm.

Body still smaller and rather narrower, strongly shining and testaceous throughout, the elytra piceous-black, without metallic glint, very gradually testaceous basally and evenly so throughout the width in about basal third and also along the sides; hairs only moderately short, stiff and yellowish; head nearly as in the preceding but larger and except that the punctures, though rather coarse, are very much smaller and sparser; antennæ rather long and slender; prothorax relatively smaller and less transverse, otherwise almost similar, except that the punctures are less coarse and much sparser and the sides more broadly concave and reflexed, relatively almost as widely so as in *planipennis;* elytra about a fourth longer than wide, much more inflated posteriorly and much wider posteriorly than at base, almost four-fifths wider than the prothorax; striæ rather finer and shallower, the punctures relatively stronger, somewhat wider than the striæ and rather widely but irregularly separated, the intervals flat, finely, sparsely and irregularly punctate, the punctures very much smaller than those of the striæ, much finer than in *brevipennis* and, on some of the interval, tending to unilinear arrangement; apices obliquely and feebly arcuate, becoming just visibly and broadly sinuate externally but more evidently so than in *planipennis,* where they are arcuate, becoming simply straighter externally. Length (♀) 7.8 mm.; width 2.7 mm. Wyoming (Green River).
bipartita n. sp.

17—Elytra black or in part nubilously paler, the striæ coarsely punctate.....18

Elytra black, with a well defined oblique humeral red spot; striæ very finely punctured.....19

18—Form moderately stout, convex, strongly shining in both sexes, deep black, with fine diaphanously pale side margins, the elytra with very feeble bluish metallic lustre; stiff hairs rather longer than usual, especially long and bristling on the anterior parts; head convex, very coarsely punctate, slightly narrower than the prothorax; antennæ slender, pale testaceous; prothorax very nearly as long as wide, the sides broadly undulato-rotundate, moderately converging posteriorly, the angles sharply prominent and reflexed; base strongly, unevenly arcuate, much narrower than the apex, which is sinuato-truncate; surface coarsely, deeply and closely punctate, the side margins very narrowly and inconspicuously reflexed; elytra two-fifths longer than wide, three-fourths wider than the prothorax, much wider posteriorly than at base, the apices obliquely truncate, rounded a little internally; striæ coarse but only feebly concave, very coarsely, rather closely punctate, the punctures smaller and more distant laterally and apically, the intervals nearly flat but inclined inwardly, except apically, their outer limits more prominent than the inner, finely, sparsely and irregularly punctate; under surface black or paler, the sterna very coarsely, closely punctate; male with the last ventral evenly rounded. Length (♂ ♀) 9.5–11.0 mm.; width 3.3–3.7 mm. Rhode Island to Pennsylvania, also New York (Lake Champlain). [*pubescens* Dej.].
pilosa Say

Form less stout, the size smaller, similar in coloration and lustre, except that the elytra have a nubilously testaceous spot at the humeri; head similar and with very prominent eyes but with the punctures much less coarse; prothorax similar in form but with the hind angles very obtuse and blunt, though rendered prominent by a similar adjacent sinuation, the punctures numerous but much less coarse, in fact having but little more than half the diameter and relatively less close-set, the erect hairs shorter and less conspicuous, like those of the head; elytra nearly similar in form though rather less inflated posteriorly and with the apices almost evenly arcuato-truncate, with the outer angles more broadly rounded; sculpture almost similar in every way; third interval with two setigerous punctures, which are not observable or extremely indistinct in *pilosa;* under surface and legs nearly similar, the sterna rather less coarsely or closely punctate. Length (♂) 9.0 mm.; width 3.0 mm. New York (Lake Champlain).....**borealis** Lec.

Form still narrower and much smaller, strongly shining throughout, piceous-black, the elytra obscure testaceous, feebly and very indefinitely shaded with piceous posteriorly; hairs rather short, not bristling; head rather small, with very prominent eyes, rather strongly but sparsely punctate, the antennæ slender, testaceous; prothorax rather small though wider than the head, as long as wide, the sides unevenly rounded, converging posteriorly, the angles sharp, prominent and abruptly reflexed; base broadly, evenly arcuate, much narrower than the apex; surface deeply but not very

coarsely, sparsely punctate, the punctures gradually a little stronger and less sparse peripherally; side margins very finely beaded and not at all diaphanous; median stria more impressed than in either of the preceding; elytra a third longer than wide, one-half to three-fifths wider than the prothorax, gradually broadening a little posteriorly, the apices obliquely and evenly arcuato-truncate; striæ relatively very coarse, much more so than in either of the preceding, feebly concave and very coarsely punctate in a manner similar to *pilosa*, the intervals much narrower, being but little wider than the grooves and similarly inclined in plane, each however with but a single series of very fine and distant punctures; under surface and legs colored as in *pilosa*, the sterna less coarsely punctate; last ventral of the male smooth and polished, almost evenly and broadly rounded, the surface impunctate, except a few fine punctures basally. Length (♂ ♀) 7.5–7.8 mm.; width 2.5–2.7 mm. Pennsylvania (Rockville and Buena Vista Spring) and New York (Lake Champlain)..... **neglecta** Hald.

19—Form rather stouter, larger in size, moderately convex, black, the side margins finely reflexed and rufo-diaphanous, the under surface obscure testaceous, blackish laterally; hairs short and stiff, more abundant than usual; head strongly, closely punctate, largely impunctate anteriorly, the eyes very prominent; prothorax evidently wider than the head, about as long as wide, the sides uneven, generally subangulate before the middle, feebly converging posteriorly, becoming sinuate at the obtusely prominent, blunt and reflexed angles; base broadly, unevenly arcuate, as wide as the apex; punctures coarse, deep and close-set but somewhat unevenly distributed; side margins finely reflexed, gradually more so basally; elytra not quite one-half longer than wide, two-thirds wider than the prothorax, slightly dilated posteriorly, the apices obliquely arcuato-truncate, with the outer angle moderately broadly rounded; striæ somewhat fine but deep, impressed, finely, very closely punctate, the intervals slightly convex, rather densely and uniformly punctate throughout, the punctures about equal to those of the striæ. Male with the last ventral broadly but rather deeply bi-impressed at apex, the impressions separated by a very obtuse low ridge, ending posteriorly at the very distinct though small apical sinus; surface between the impressions and the apical margin very complexly virmiculato-rugose. Length (♂) 13.5 mm.; width 4.3 mm. Pennsylvania (Rockville),—A. B. Champlain.
venator Dej.

Form more slender, the size smaller; coloration and pubescence similar; head a little smaller and with the eyes very prominent, the antennæ relatively much longer, being three-fifths as long as the body; prothorax narrower, fully as long as wide, the sides less angulate, irregularly rounded, rather more converging basally, the prominent basal angles rather more sharply defined and more reflexed; punctures coarse and deep but still more uneven and generally less close-set than in the preceding; elytra a little shorter, about two-fifths longer than wide, similarly oblong-oboval and two-thirds

wider than the prothorax, but with the sides apically more gradually rounding into the apices, the latter nearly similar but narrower; striæ nearly similar, the intervals a little more convex, the punctures not quite so large and distinctly less close-set. Male with the last ventral evenly convex, with scarcely a trace of impressions but with a very narrow and feeble raised median line apically, the margin with a small and feeble median sinus, the surface without trace of the peculiar vermiculate peripheral sculpture of *venator*. Length (♂) 10.8 mm.; width 3.8 mm. New Jersey.....**americana** Dej.

The two species *elegans* and *cribrata* of LeConte, are omitted, as I have no representative of them at present; the first is a remarkably distinct species by reason of the form and sculpture of the prothorax, which is as long as wide, with finely reflexed margins, apparently almost as in *americana*, combined with elytral punctures in single series; it must, in fact, be a decidedly isolated form and is not properly classified by Horn, who places it in the division having the broadly reflexed thoracic margins of *cribricollis*. *Cribrata* is related to *pilosa* but has the prothorax very coarsely and subconfluently punctured at the sides. The identification of *marginata* Kirby, given above, is a surmise and may not be correct; *marginata* is considered to be a synonym of *cribricollis* by LeConte and Horn; whether this be true or not, the species above described under the name *marginata*, while closely related to *cribricollis*, is manifestly not identical. LeConte states that the elytral striæ in *planipennis* are impunctate; the punctures are very small and close-set and could be overlooked very easily; they contrast remarkably in size with the strong strial punctures of *brevipennis*, which nevertheless was placed in synonymy by Horn, as previously remarked. In regard to *americana* and *venator* of Dejean, it can only be said that I have at hand two distinct species of the *americana* type, but as Dejean does not describe the male sexual characters in either of his species, it is uncertain whether or not they represent them correctly. The author in describing the interstitial sculpture of *americana*, states that it is "confertissime punctatissimis" and, if this means anything, probably is intended to convey the idea that the punctures are very strong and dense; this would suit the species called *venator* above very well, but not so assuredly the smaller and more slender form, which I have identified as *americana*, where the punctures are evidently less dense than in *venator*. The original type of *americana* seems to have been immature, being described as brown.

It may be that I do not have the true *americana* at all, as it is by intimation said to be punctured as in *venator*, for it may be a Georgian species sent by the elder LeConte. In this case *americana* Csy., would still be undescribed. Individuals of the *americana* type seem to be rare, though there are certainly a number of species. I have two females, not mentioned above in the descriptions and not mutually the same specifically; they are labeled "Colorado" but possibly in error; one of them seems to match the assumed type of *venator* rather well and the other is like *americana* Csy., in some respects but distinctly differs in others.

Helluomorpha Lap.

The uniformly testaceous species of this genus with unelongated prothorax, are very similar in general appearance among themselves but are nevertheless distinguished by some good minor characters. *Texana* Lec., is rather abundant in Clark Co., Kansas, and also in Texas; it varies a good deal in size; *ferruginea* Lec., seems to be less frequently taken and I have but two examples—from Texas and Jemez Springs, New Mexico. The three following allied species have not yet been described:

Helluomorpha latitarsis n. sp.—Moderately depressed, rather shining, testaceous throughout, the pubescence moderate and pallid, the hairs from the series bordering the convex intervals oblique in contrary senses; head scarcely four-fifths as wide as the prothorax, sparsely, irregularly and not very strongly punctate, the eyes very prominent; antennæ rather short, broadly compressed, the joints beyond the fourth about as long as wide, impressed and glabrous medially toward base; prothorax slightly wider than long, the sides evenly and strongly rounded, converging from about the middle, becoming parallel and nearly straight basally, the angles rather acute and sharp, rendered slightly prominent by a minute sinus just before them; base slightly wider than the apex, broadly sinuate, becoming abruptly anteriorly oblique at the sides; apex feebly sinuate medially, without lateral angles; surface linearly impressed along the middle, rather coarsely but sparsely punctured throughout, finely reflexed at the sides from apex to base and with a large deep latero-basal impression; elytra two-thirds longer than wide, three-fourths wider than the prothorax, slightly inflated posteriorly, the apices broadly and evenly arcuate; surface with moderate glabrous costæ, separated by wider concave lines, which are rather closely, not very coarsely and confusedly punctate throughout; legs stout, the hind tarsi broad and flattened, the third joint barely at all longer than wide and parallel-sided. Length (♂) 15.0 mm.; width 4.8 mm. Arizona (locality not indicated).

Differs from *texana* in the finer, more confused elytral punctures, longer antennal joints and broader, more parallel tarsi, and, from *ferruginea*, in its broader antennæ, with quadrate and not oblong joints, smaller elytral punctures and in the tarsal characters.

Helluomorpha papago n. sp.—Much smaller than the preceding and more slender but otherwise nearly similar, shining and testaceous, the elytral hairs stiff, longer and less numerous but similar in arrangement; head as wide as the prothorax, with prominent eyes and convex, sparsely and feebly but not finely punctate surface; antennæ less broad, the joints fully as long as wide or somewhat longer, sculptured as in *texana* and *latitarsis;* prothorax as in the preceding but smaller and with the punctures much finer and still sparser, closer laterally and a little coarser basally, the basal angles similar though less acute and more retracted; elytra three-fourths longer than wide, one-half wider than the prothorax, similar in general form, the costæ broader and much feebler, separated by feeble channels, which are not at all wider than the costæ and having each two rather close-set series of very moderate, widely and irregularly separated punctures; tarsi much more slender, more convex and with the joints not parallel; abdomen finely, sparsely punctate. Length (♂) 12.3 mm.; width 3.8 mm. Arizona (probably southern).

Distinct from all the other species in elytral sculpture and in the sparse and very irregular punctuation; the head is relatively larger and more convex than in *latitarsis*.

Helluomorpha languida n. sp.—Rather small in size and not much dilated, shining and testaceous; head very nearly as wide as the prothorax, irregularly and rather coarsely but feebly and sparsely punctate, the eyes moderate in size but very prominent; antennæ more slender than usual, extending to basal fifth of the elytra, the joints nearly as *ferruginea* but not quite so distinctly elongated; prothorax not quite as long as wide, less rounded at the sides than usual, feebly narrowed posteriorly where the sides become gradually rather deeply and broadly sinuate, the hind angles somewhat prominent though obtuse, sharply defined and more reflexed, the usual minute sinus before them obsolescent; base transverse, sharply oblique at the sides, much wider than the sinuate apex; surface coarsely, deeply and sparsely punctate, the median line broadly impressed and the basal impressions large and deep, shorter and less linear than in *ferruginea;* disk, at each side of the median impression, broadly almost impunctate; elytra short, only slightly broadened from base to near the apex, the apices broadly rounded as usual, three-fifths to two-thirds longer than wide, four-fifths wider than the prothorax, the smooth costæ broadly and feebly elevated and somewhat indefinite, the concave lines broader than the costæ, with two irregular series of moderate punctures, the latter becoming much confused laterally and apically; tarsi unusually slender. Length (♂♀) 12.0–13.0 mm.; width 3.9–4.1 mm. Texas (Brownsville),—F. H. Snow. Four examples.

Much smaller than *ferruginea*, with which this is probably most closely allied and with feebler, less definite elytral costæ, relatively smaller prothorax and somewhat shorter elytra; the antennæ are of nearly the same type; the depressed lines of the elytra are more sparsely, less strongly and more bilinearly punctate, the punctures being less broadly confused throughout than in *ferruginea*. The head is much more distinctly narrower than the prothorax in *ferruginea* than it is in *languida*.

Lebia Latr.

The species *furcata* of LeConte, belonging to the group *Aphelogenia* Chd., is composite in most collections, comprising a number of distinct forms having mutually a very close superficial resemblance. The body is pale yellow throughout above and beneath, the elytra with three black vittæ, not attaining the apex, the one on the suture bifurcating basally. G. H. Horn discovered one of these allied species, having entirely black legs, and named it *depicta*. Those in my collection may be known as follows:

Head much narrower than the prothorax in both sexes. 2
Head subequal in width to the prothorax, relatively much larger than in the preceding group 5
2—Legs black throughout, the femora sometimes pale at the extreme base, the tibiæ always black; antennæ and palpi black, the former with the basal joint pale; elytral striæ wholly impunctate. Length 6.0–6.3 mm.; width 2.75 mm. New Mexico (Las Vegas) and Colorado (Boulder Co.). Montana—Horn. . . . . **depicta** Horn
Legs not entirely black, the femora pale basally, the tibiæ pale externally except in *debiliceps*, the tarsi always black. 3
3—Sutural black vitta, at the middle of the length, much narrower than the adjoining pale vitta. Body larger, distinctly broader in outline; head, prothorax and antennæ nearly as in *furcata;* elytra decidedly broader, more oblong, less inflated posteriorly, the sutural vitta bifurcating from just before the middle, the striæ impunctate; legs as in *furcata*, only moderately slender. Length 7.3 mm.; width 3.2–3.3 mm. California (Mendocino Co.). . . . . **sonomæ** n. sp.
Sutural black vitta never decidedly narrower than the pale vitta. 4
4—The sutural vitta at the middle about equal in width to the adjoining pale vitta. Head well developed, with very prominent eyes; prothorax fully twice as wide as long; elytra about a third longer than wide, the striæ not distinctly punctate externally, the sutural black vitta bifurcating from just before the middle. Length 6.8–7.2 mm.; width 2.9 mm. Wisconsin (Bayfield) to Louisiana (Alexandria). Lake Superior and Platte River—LeConte . . . . . **furcata** Lec.
The sutural vitta very much broader, the portion on each elytron equal

in width to the adjacent pale vitta. Head and prothorax both relatively smaller and more shining; neck narrower, the prothorax distinctly less than twice as wide as long; elytra shorter, barely a fourth longer than wide, the external striæ stronger and more evidently punctate, the broad sutural vitta bifurcating only in basal third; legs more slender, deep black throughout, the femora very pale, black at tip. Length 5.8–6.0 mm.; width 2.65 mm. Indiana. **debiliceps** n. sp.

5—Body smaller and rather narrower than in any of the preceding species but otherwise similar, the legs and antennæ colored as in *furcata;* head nearly smooth, just visibly narrower than the prothorax, the eyes large and prominent; prothorax not quite twice as wide as long, the sides abruptly reflexed; elytra smooth, with feeble impunctate striæ, the sides more rounding or more gradually converging behind, not a third longer than wide, the sutural vitta as wide as the adjacent pale vitta, bifurcating in basal third, the basal part of the two arms more rapidly inflated than in any other of the group. Length 5.6 mm.; width 2.25 mm. Texas (Brownsville),—Wickham. **amnicola** n. sp.

I think there can be but little doubt of the specific value of any of these forms; the constancy of elytral ornamentation is parallel to that prevailing in a large group of the genus *Disonycha.*

II—FURTHER STUDIES AMONG THE AMERICAN LONGICORNIA.

This paper is merely a continuation of that which appeared in the preceding number of this series of memoirs and comprises the portions of the family Cerambycidæ not there included, so far as the more or less limited material forming part of the author's collection will permit. The revelation of lack of careful observation on the part of many authors who have written upon the Cerambycidæ, especially in regard to the structural characters pertaining to sex, is even more patent throughout almost all the groups here studied than might be inferred from the results arrived at in the first paper. These conclusions, being so out of joint with current conceptions, will give rise inevitably to much divergence of view wherever interest of any kind is awakened, and this, in the present stage of opinion, will generally take the form of opposition; but the only request on the part of the writer, and one that he greatly desires fulfilled, is that those who are disposed to criticize adversely shall first make themselves thoroughly familiar with the subject by careful and discriminating investigation. He has no excuse to make for the large number of taxonomic units and subunits proposed, the absolute value of which he is unable to fix in many cases, otherwise than that they seem actually to exist in nature and should therefore be recorded. However, to pretend that errors and probably many of them are not mingled with statements of the truth, would be equivalent to advocating a superhuman quality for the work.

Family CERAMBYCIDÆ.

Subfamily CERAMBYCINÆ.

Tribe LEPTURINI.

No very satisfactory way to classify the genera of this tribe has been discovered, the tarsal characters used by LeConte and Horn not being sufficiently radical and subject to exceptions. The genera

themselves are, however, well characterized as a rule. The tribe is subarctic in habitat, very few, comparatively, entering the tropics and includes in North America a larger number of species perhaps than any other equivalent subdivision of the family.

Rhagium Fabr.

Subgen. **Hargium** Sam.

In general habitus this genus harmonizes so little with any other that it would seem out of place anywhere; but the sharply spinose sides of the prothorax suggests a relationship with the *Pachyta* series in this part of the Lepturini. In the short thick antennæ of peculiar structure, prominent prosternal process and strongly costulate elytra, it is wholly isolated in the tribe and is perhaps a surviving remnant of an ancient and extinct line. Our species all belong to the group *Hargium* of Samouelle, which may have generic rather than subgeneric value, and are more or less close allies of the European *inquisitor* Linn. (*indagator* Fabr.). An inspection of the male sexual characters betrays very marked variety, and the material lumped together in almost every cabinet resolves itself into a number of rather well characterized species as follows:

Glabrous part of the tempora, adjoining the eyes, shorter, always distinctly less than half as long as the latter; longitudinal thoracic elevations always wanting; body shorter in form, the elytra always less than twice as long as wide; species characterizing the more boreal faunal regions.....2

Glabrous part of the tempora more developed, about half as long as the eyes; body more elongate in form; species more austral in distribution.....7

2—Impunctate median vitta of the prothorax narrow, ill-defined and frequently interrupted; cinereous vestiture dense, imparting a grayer appearance than observable in the following species; punctures of the head and pronotum dense, very deep and distinct; paler mottling of the elytra small and feeble, the two transverse bands barely traceable; abdomen black throughout; antennæ extending scarcely to the base of the prothorax; tufted cinereous vestiture of the under surface dense and very conspicuous; legs testaceous, with the usual sparse flying hairs, the femora and tibiæ blackish distally, the tarsi black; abdominal carina strong, extending well onto the last segment. Female with the fifth ventral as long as the fourth, trapezoidal, with rounded angles, the truncate and very pubescent apex less than half as wide as the base; last dorsal segment arcuately and moderately narrowing, the apex broadly sinuate, with rounded

angles. Male not at hand. Length 12.7–14.5 mm.; width 3.8–4.8 mm. California (Sacramento Co.).....**californicum** n. sp.

Impunctate thoracic vitta more or less broad, entire, very sharply defined and distinct; pubescence rather less dense, the two darker transverse elytral bands generally distinct, feebler and indistinct in *boreale;* abdomen mottled red and black as a rule, sometimes becoming wholly black.....3

3—Femora very stout, half as broad as the thoracic width; body stout; head well developed, the punctures perforate, moderate in size and well separated; eyes separated by two and one-half times their own width; antennæ extending fully to the base of the prothorax, of the usual structure; prothorax fully as wide as long, the punctures like those of the head but smaller, fully as sparse, not concealed by the vestitute; elytra subparallel, almost twice as long as wide, very much wider than the prothorax as usual, the ridges rather feebler than in any other species, black, the testaceous spots small; abdomen sparsely and not strongly punctured, sparsely pubescent in the usual clusters, testaceous, the median line and apical margin of all the segments black; segments three to five diminishing rapidly in length, the truncate apex of the fifth scarcely more than half as wide as the base. Length (♂) 16.0 mm.; width 5.2 mm. Massachusetts (Medford).....**crassipes** n. sp.

Femora of the usual thickness, much less than half as thick as the thoracic width.....4

4—Antennæ unusually small, the head much less developed than usual; body small in size, colored and pubescent as usual; head relatively coarsely and irregularly punctate, with an admixture of smaller punctures, the antennæ not as long as the head and prothorax, the latter formed as usual, the sculpture coarser and more irregular than in the preceding, though nowhere very close; elytra nearly as in the preceding but with stronger ridges and coarser sculpture; abdomen finely and remotely punctate, black, each segment testaceous except at the middle, base and apex, the fifth trapezoidal and a little longer than the fourth. Length (♀) 11.5 mm.; width 3.5 mm. Massachusetts (Malden).....**parvicorne** n. sp.

Antennæ and head of the usual development.....5

5—Apex of the fifth male ventral rectilinearly truncate and unusually broad, much more than half as wide as the base. Body in form and coloration nearly as in the preceding, the cephalic punctures rather coarse, perforate as usual and well separated; eyes separated by nearly three times their own width in the male; prothorax as usual, except that the apical is relatively less than the basal width, the sculpture close and subrugose, the median smooth stripe narrower than in any other except *californicum* though even; elytra confusedly mottled, the black rather predominating, the ridges strong and the sculpture very coarse, dense and deep; abdomen deep black throughout in the type, the last three segments diminishing gradually though very slowly in length. Length (♂) 12.5 mm.; width 4.3 mm. Wisconsin (Bayfield),—Wickham.....**boreale** n. sp.

Apex of the fifth ventral in the male narrower and distinctly sinuate, not at all exceeding half the basal width.....6

6—Larger species, stout in form, black, the elytra irregularly and finely mottled with testaceous as usual; head strongly and unusually closely punctate, the eyes not differing much sexually, separated by a little less than three times their width in the male; prothorax fully as wide as long, the apical and basal transverse depressions conspicuous, the punctures strong and well separated, smaller and much sparser than on the head; elytra with pronounced ridges and coarse and perforate, evidently separated punctures; abdomen often wholly black, sometimes with the segments partially rufescent; legs rufous and black, with clustered pubescence as usual; tarsi wholly deep black. Length (♂♀) 13.5–16.0 mm.; width 4.7–5.7 mm. Northeastern States.....**lineatum** Oliv.

Smaller species and relatively more slender, otherwise nearly similar, except that the punctures of the head are very much more widely separated and scarcely larger or more close-set than those of the prothorax; eyes much more developed, separated by but little more than twice their width in the male, differing more sexually, being separated by nearly three times their width in the female; thoracic punctures uneven and generally widely separated; elytra as in the preceding but with more confluent sculpture; abdomen in great part red, the last three segments of the male diminishing rapidly in length; fifth segment of the female differing scarcely from that of the male, being relatively shorter than usual; median low carina of the genus very evident throughout the length. Length (♂♀) 10.8–12.2 mm.; width 3.4–3.9 mm. Massachusetts and Pennsylvania.

cariniventre n. sp.

7—Pronotum at each side of the median line even and without trace of longitudinal elevations. Body large and stout, of the usual sculpture, coloration and general habitus; head more evidently sulcate along the middle than in *lineatum*, the sulcus filled with dense prostrate white hairs, the punctures coarse and close-set; eyes well developed, unusually convex; antennæ as usual; prothorax relatively larger than in any other form except *crassipes*, otherwise as in *lineatum*, except that the sculpture is coarser and much denser; elytra nearly twice as long as wide, subcuneiform, with more prominent humeri than in *lineatum*, the ridges strong, the punctures coarse and densely crowded, very much denser than in *lineatum;* abdomen deep black throughout, shining, very finely and sparsely punctate, the pubescence less clustered than usual, the carina fine; fifth segment parabolic, longer than the preceding in the female; legs slender, black, the femora red only toward base. Length (♀) 17.5 mm.; width 6.3 mm. New Mexico.....**thoracicum** n. sp.

Pronotum with a strong glabrous longitudinal elevation between the median smooth line and each side; elytral ridges strong.....8

8—Form and coloration throughout nearly as in the preceding but more slender; head coarsely and still more densely sculptured, without so evident a sulcus and with notably less developed eyes; prothorax similar in form but smaller, coarsely, closely and irregularly punctate

and less pubescent, the punctures separated on the glabrous elevations; elytra similar, except that the sculpture is still coarser, subconfluent; abdomen black throughout and polished, finely, sparsely punctate, the last segment (♀) not parabolic but with the median part of the apex truncate and limited by distinct though obtuse angles, barely as long as the preceding segment; femora and tibiæ partially red. Length (♂♀) 11.5–17.0 mm.; width 3.8–5.5 mm. Colorado (Fraser—8000 feet—and in Boulder Co.) and New Mexico (Las Vegas).....**montanum** n. sp.

Form stouter, the coloration more rufous; head with less coarse and dense punctures, the glabrous part of the tempora rather shorter, not quite half as long as the eyes, which are more developed than in any other species, separated by less than twice their own width (♂) or but slightly less (♀); antennæ well developed, of the usual structure; prothorax as in *montanum* but with less coarse or dense punctures; elytra broad, feebly cuneiform, red, with irregular blackish maculation, the punctures unusually deep, coarse and contiguous though relatively not so coarse as in *montanum*, the humeri less prominent; abdomen red, with black segmental margins and median line, the punctures not so fine or sparse and more rugulose than in *montanum*, the fifth segment (♀) more narrowly and arcuately truncate medially. Length (♂♀) 14.5–19.0 mm.; width 5.0–6.3 mm. Mexico (Guerrero).....*__mexicanum__ n. sp.

There are certain very marked sexual differences in the conformation, sculpture and vestiture of the last dorsal abdominal plate of the female, and in this feature the distinction between *mexicanum* and *thoracicum*, for example, is well marked, the plate being large, concave, medially channeled and feebly pubescent in *thoracicum* and smaller, more convex, not channeled, densely pubescent and apically bilobed in *mexicanum*. These characters, in conjunction with those mentioned above, seem to show that there are a number of true species in this genus, in spite of the universally rather similar habitus—scarcely more marked, however, than in *Omophron* or *Heterocerus*.

Pyrotrichus Lec.

This genus was referred by LeConte to the tribe Encyclopini, differing from Lepturini in a rather indefinite character relating to the slope of the frontal part of the head, which in my opinion is not sufficient for tribal distinction. Of the type named *vitticollis* by LeConte, I have a very good pair taken in Alameda Co. The following, from southern California, differs in several important features:

Pyrotrichus cribripennis n. sp.—Elongate, moderately convex, dull in lustre, black, with pubescence throughout as in *vitticollis;* head quadrate, the eyes finely faceted, the emargination extending more than half way through them, the antennæ (♀) extending barely beyond the middle of the body, the tempora straight and parallel, nearly as prominent as the eyes, the basal angles right and sharply marked; prothorax much wider than long, the lateral prominences slightly behind the middle and obtusely angulate, more rounded anteriorly than posteriorly; apex much narrower than the base, the latter broadly, feebly bisinuate; surface convex, rather uneven, closely punctate, a large rounded elevation at each side of the striiform median line shallowly concave, the inner part of its anterior slope impunctate; scutellum very densely fulvo-pubescent; elytra nearly a third wider than the prothorax, two and three-fourths times as long as wide, rectilinearly parallel, gently narrowing arcuately in about apical fourth to the transverse apices, the outer angles broadly rounded, the sutural rather acute but not prolonged; surface even, with coarse perforate punctures, separated by rather less than half their diameters, each with a very short silvery hair decumbent within it near the bottom; under surface finely, densely punctate and with moderately close cinereous decumbent hairs, becoming coarser and very dense on the sterna and throughout the meso- and metasternal parapleura; legs slender, the basal joint of the hind tarsi two-thirds as long as the remainder, the second obtriangular, slightly elongate, their under surface with short and not very dense pubescence. Length 15.0 mm.; width 4.2 mm. California (Los Angeles Co.).

The single female in my collection differs from the female of *vitticollis* in its much larger size, in having the fifth antennal joint evidently shorter than the two preceding combined and not equal thereto, in having less prominent eyes or much less retracted tempora, with the basal angles more nearly right, in the wholly deep black abdomen, this being strongly rufescent in both sexes of *vitticollis* and in the longer and thicker tarsi.

Thesalia Csy.

The type of this genus was announced by the writer under the name *Acmæops lisa* Leng, the single example at hand seeming to belong to that species, but more careful perusal of the description of *lisa*, shows beyond doubt that the type is not *lisa* and the present opportunity is therefore taken to make it known under a different name as follows:

Thesalia rubriceps n. sp.—Slender, moderately convex, shining, black, the entire head and basal joint of the antennæ pale testaceous, the legs piceous-black, the anterior testaceous excepting the black tarsi; body barely at all pubescent; head moderate, wider than long, with very prom-

inent and finely faceted, deeply emarginate eyes, the much retracted tempora arcuately and feebly converging behind them to the obtuse angles at the deep and strong constriction extending equally across the base, the surface equally and rather strongly but not densely punctured throughout; antennæ slender, filiform, deep black excepting the moderately stout basal joint, extending to apical fourth of the elytra, the third joint but little longer than the fourth, the fifth as long as the two preceding combined; prothorax fully a third longer than wide, strongly constricted at apex, very feebly at base, strongly and obtusely tuberculate at the sides just before the middle; base just visibly arcuate and much wider than the apex, the surface evenly convex, with moderate and shallow, well separated punctures, each bearing a very small fulvescent hair; scutellum small, nude, rather longer than wide, obtuse; elytra rectilinearly subparallel, four-fifths wider than the prothorax, two and three-fourths times as long as wide, very feebly narrowing and slightly arcuate at the sides in about apical fifth to the broadly rounded apices, the sutural angles right and blunt; surface even, polished, very coarsely, deeply punctate, a little less coarsely apically, the punctures everywhere well separated by fully their own diameters, each bearing a short stiff suberect and fusco-cinereous hair; under surface sparsely cinereo-pubescent, the abdomen polished, finely punctate, closely so basally, very sparsely apically, the last ventral in the type evenly rounded, as long as the preceding; legs rather short, not very slender, the tarsi nearly as in *Pyrotrichus*. Length 7.3 mm.; width 1.8 mm. California (Marin Co.).

The type seems to be a male and differs from *Acmæops lisa* in having only the first antennal joint pale, the pronotum sparsely punctate throughout above, not densely punctured with a small smooth space near the base as in *lisa*, and in the widely separated elytral punctures, these being almost confluent basally in *lisa*, also in the black and sparsely, feebly setulose elytra, these being rufo-testaceous and clothed with fine golden pubescence in *lisa*. It is somewhat evident, however, that *lisa* also may be a *Thesalia* and I am unable to account for its assignment to *Acmæops*, in view of its deeply emarginate eyes, disagreeing thus with the most important distinguishing character of the genus *Acmæops*.

The genus *Thesalia*, of which the type is the above described *rubriceps*, evidently comes between *Pyrotrichus* and *Encyclops*, having the general form and sculpture of the elytra and legs of the former and the more salient characters of the head, antennæ and prothorax of the latter. *Leptalia*, on the other hand, is so close to *Toxotus* in general facies and structure, that the two could very well be united, were it not for the normal tibial structure of *Leptalia*, the singular tibial apex of *Toxotus* being wholly unsuggested, but

the basally constricted head in *Leptalia* occurs also in *Toxotus cylindricollis* and *lateralis*.

Hapalosalia n. gen.

The type of this genus is *Leptura vibex* Newm. This species, with a number of others more or less closely allied, such as *sphæricollis* and *ruficollis* Say, *scripta* Lec., and *aurata* Horn, have hitherto been placed in *Leptura*, with which they have no great affinity, either in structure or general habitus. The metasternal episterna are very much narrower than in any Lepturid type and the form of the prothorax, nature of the ornamentation and structure of the head, eyes and antennæ, show unmistakably that they are allied to *Leptalia* and *Centrodera* rather than to *Leptura*. Some individuals have the prothorax red and others black, but I am unable to say whether this is fortuitous chromatic dimorphism, as there seem to be no intermediates, whether it may be sexual in some cases, or whether it denotes specific standing. In a series of eight examples of *scripta* before me, the prothorax is normally black in seven and in the eighth, which happens to be the only female in the series, it is red but black anteriorly, at the sides beneath and with a large rounded central black spot. In three examples, male and female, of *sphæricollis*, the color is uniformly black throughout the body and elytra, and in a single female of *ruficollis*, where the entire prothorax is red, the form of the body and prothorax is so much stouter than in the females of *sphæricollis*, that I am disposed to give it a subspecific status, at least under the only available source of inference. The species are rather numerous and may be known by the following characters:

Elytra with irregular ornamentation, somewhat as in *Centrodera picta;* body black or piceous-black, the legs pale, the hind femora black apically, the antennæ and elytra pale luteous, the latter with some short disconnected black dashes externally and one from the middle of the base, all sometimes wanting; prothorax elongate almost as in *Thesalia* or certain *Centrodera* but only very finely, sparsely punctate. Length (♂ ♀) 6.2–7.5 mm.; width 1.4–2.1 mm. Oregon and Washington State..... **scripta** Lec.

Elytra black, with median vitta and lateral margin pale..... 2

Elytra wholly black..... 6

2—Elytra with the median vitta greatly expanded, so that the color is luteous with rather narrow sutural and lateral black vittæ; prothorax

narrower than the head, of the usual strongly biconstricted, laterally prominently rounded form, finely, rather closely punctate; elytra more coarsely and closely punctate than in *scripta*, less coarsely, though distinctly, apically than basally. Length (♂) 7.6 mm.; width 2.1 mm. West Virginia.....**aurata** Horn

Elytra with the median vitta narrow, the ground color black.....3

3—Head scarcely at all impressed transversely. Body black, shining; legs pale, the tip of the hind femora black; antennæ (♀) very slender, piceous, testaceous basally, three-fourths as long as the body, the third joint not longer than the first; head not quite as wide as the prothorax, the tempora less prominent than the eyes as usual but nearly parallel, rounded basally, finely, sparsely punctate throughout; prothorax shorter than usual, not as long as wide, the lateral prominences subangulate; punctures fine and sparse but distinct; basal constriction prolonged anteriorly along the median line for a short distance; elytra shorter than usual, but little more than twice as long as wide, parallel, very obtuse at apex, the apices rounded, black, each with a discal yellow vitta and pale margin from the base to apical fourth, the punctures deep and coarse but well separated, smaller apically; abdomen pale, clouded with piceous, finely, rather closely punctulate. Length (♀) 6.8 mm.; width 1.8 mm. Wisconsin (Bayfield),—Wickham.....**lineicornis** n. sp.

Head more or less deeply impressed transversely between the eyes...4

4—Tempora nearly parallel behind the eyes, rounding at base. Body black, the surface polished; legs and antennæ as in the preceding, except that the latter (♀) are longer, being as long as the body and with the third joint one-half longer than the first; head almost impunctate; prothorax scarcely as wide as the head, longer than wide, very convex, the sides strongly, evenly inflated medially, not at all anguliform; basal constriction feeble discally, not at all prolonged medially; punctures extremely minute and sparse; elytra more elongate, nearly two and one-half times as long as wide, parallel, rounded at the tips, black, each with a yellow vitta which is broad at base, gradually narrowing and disappearing before the middle, the pale lateral edge disappearing posteriorly; punctures moderate, deep and perforate, separated basally by nearly twice their diameters; abdomen pale, the basal segments black at the sides basally. Length (♀) 8.0 mm.; width 2.3 mm. Wisconsin (Bayfield),—Wickham.....**læviceps** n. sp.

Tempora converging behind the eyes; elytral vitta much longer. Body and abdomen black throughout, the legs as in the preceding; antennæ (♀) piceous-black, very slender, nearly as long as the body; prothorax elongate, a little narrower than the head, the sides prominent before the middle; punctures fine and sparse but distinct; elytra fully two and one-half times as long as wide, parallel, more coarsely and closely punctate than in the preceding, the punctures basally separated by their own widths, the discal yellow stripe almost attaining the apex, near which it is frequently dilated almost to the suture. Length (♀) 8.4 mm.; width 2.3 mm. Pennsylvania. [*nitidicollis* Horn].....**vibex** Newm.

A—Body and abdomen black, the legs as in the preceding, the prothorax wholly bright rufous; antennæ piceo-testaceous, longer than the body in the male; head nearly similar; prothorax relatively much narrower, more decidedly elongate, the sides more rounded and less prominent, the punctures minute and sparse; elytra gradually cuneiform, long, obtuse at apex, punctured as in *vibex* and with a nearly similar vitta, except that it is attenuated, gradually disappearing near the apex. Length (♂) 6.5–7.2 mm.; width 1.6–1.8 mm. Indiana.....**fragilis** n. subsp.

6—Black throughout the body, abdomen and elytra, the antennæ very slender, blackish, testaceous basally; tempora but feebly narrowed behind the eyes; prothorax of the usual form, minutely, sparsely punctate, about as wide as the head in both sexes, rounded at the sides; elytra rather broad, parallel (♀) or narrower though only feebly cuneiform (♂), deeply, rather coarsely but not densely punctate. Length (♂ ♀) 6.5–8.2 mm.; width 1.8–2.3 mm. Canada and Wisconsin. [*allecta* Newm.].....**sphæricollis** Say

A—Similar in almost every feature, except that the body is slightly broader in form, the prothorax entirely bright red and differing more especially by the form of the latter, which is narrowed more strongly at apex, with the convex intermediate portion more transverse. Length (♀) 8.8 mm.; width 2.6 mm. Canada. [*puperculа* Newm.].....**ruficollis** Say

The difference in antennal structure and form of the prothorax between the females of *lineicornis* and *læviceps* is very remarkable. Just what the true relationship between *fragilis* and *vibex* on the one hand, and *ruficollis* and *sphæricollis* on the other, may be, I have not material enough at present to determine. There is a remarkable constancy throughout the genus in the peculiar coloration of the legs, pale with the hind femora alone black at apex, although in both *ruficollis* and *sphæricollis*, the other legs become also partially dusky, and in *aurata* they are entirely pale.

Centrodera Lec.

The type of the following species has been in my cabinet as the male of *nevadica* Lec., with a query, for many years; but, as it appears to be different, it should take a more specific name as follows:

Centrodera oculata n. sp.—Elongate, moderately convex and shining, clear red-brown throughout, the legs and antennæ concolorous, except that all the joints of the latter after the fourth are deep black apically, the last joint with an ante-apical black band; pubescence rather long, ashy, sparse and decumbent; head a little wider than the prothorax, the eyes very large and convex, coarsely faceted and separated by barely half of their own width; antennæ long and slender, about as long as the

body, the third joint barely longer than the first, much longer than the fourth and much shorter than the fifth as well as all the following; prothorax distinctly elongate, strongly constricted near the apex, less strongly near the base and angularly prominent at the middle of the sides, the base much wider than the apex, bisinuate; surface strongly convex, deeply impressed along the middle between the constrictions, finely and closely punctate; scutellum densely pubescent, fully as long as wide, acutely ogival; elytra at base nearly twice as wide as the prothorax, about four times as long, feebly tapering, broadly rounding at apex to the rounded sutural angles, the surface perfectly even, coarsely, closely punctured basally, much more finely and feebly posteriorly; legs moderate, slender, the basal joint of the hind tarsi nearly as long as the remainder. Length (♂) 17.5 mm.; width 4.0 mm. California (Mt. Diablo).

Differs from *nevadica* in its relatively wider and more strongly punctate elytra, in having the lateral prominences of the prothorax apparently more angulate, the apex much narrower than the base and in the very large eyes. The last two features are of course to a considerable degree subject to sexual modification, but it is probable that the eyes are also notably large in the female; the original description does not state whether the antennal joints in the female type of *nevadica* are black at apex, but this feature in the male of *oculata* may also be sexual in nature. The prothorax being much wider at base than at apex, together with the rather different zoological habitat, would seem to indicate, at any rate, that *oculata* is not exactly the same as *nevadica*.

Centrodera tenera n. sp.—Small and very slender, parallel, uniform dark red-brown in color, the antennæ obscure testaceous, having the apical two-thirds of joints five to eleven black; pubescence gray, decumbent, uniform, rather short and only moderately dense throughout; head very finely, closely punctulate, the median stria distinct; eyes large, very coarsely faceted and separated by two-thirds of their own width; antennæ very slender, fully as long as the body, the fifth joint as long as two to four combined, fourth two-thirds as long as the second; prothorax evidently elongate and narrower at apex than at base, strongly biconstricted, barely at all impressed along the middle, the median lateral prominences strong but obtuse; punctures fine and dense, with a smooth median line toward base; elytra three times as long as the head and prothorax, two-thirds wider than the latter, parallel, rapidly obtusely rounded at apex, finely, very feebly, sparsely and somewhat unevenly punctate, producing the appearance of two or three vague longitudinal lines of denser pubescence; legs slender, the basal joint of the hind tarsi almost as long as the entire remainder. Length 10.5 mm.; width 2.3 mm. California (San Diego).

The single type is probably a male and was sent to me among

specimens of *Aneflus linearis* by Mr. Ricksecker. It does not appear to be allied in any way closely with *nevadica*, and is widely distinct from the preceding.

Ortholeptura n. gen.

The body is elongate, very much as in *Centrodera* throughout, except that the legs, and especially the tarsi, are much longer, the latter almost as densely clothed with short pubescence beneath. The eyes are large, convex and prominent, coarsely faceted and with a relatively small but deep, angulate emargination, the antennæ long and moderately slender, the fourth joint distinctly shorter than the third or fifth, the head before the antennæ as in *Leptalia* and the palpi slender. The prothorax is subcylindric, only very slightly protuberant at the sides, only moderately biconstricted and is dorsally channeled feebly along the middle, the elytra with the sutural angle strongly spiniform in typical species. The type is the following:

Ortholeptura oculea n. sp.—Elongate, relatively slender, convex, shining anteriorly, the elytra feebly alutaceous, feebly pubescent, pale flavotestaceous throughout, except some small maculation as stated; head with small and well separated punctures, becoming fine and close near the eyes, which are very large and convex, separated above by barely one-half more than their width, extending almost to the base, which is abruptly constricted behind the extremely short and retracted, arcuately converging tempora; antennæ (♂) about as long as the body, pale, the fourth joint fully four times as long as wide, four-fifths as long as the third and three-fourths as long as the fifth, barely as long as the first, which is thickened and curved apically; penultimate joint of the maxillary palpi barely two-thirds as long as the last; prothorax a fourth longer than wide, the arcuate apex but little narrower than the broadly bisinuate base, the basal angles obtuse; sides very feebly arcuate submedially; basal constriction short but very deep discally, the apical broad and deep, the median line acutely but broadly impressed from the centre to the apical constriction; punctures well separated, strong, moderately coarse and unequal laterally, becoming very fine, sparse and feeble medially; surface with the apical and basal beads and two elongate central spots blackish; scutellum acutely triangular; elytra four times as long as the prothorax, widest at the humeri, where they are not quite twice as wide as the prothorax, strongly but not very densely punctate, gradually more finely posteriorly, each with two small elongate black spots near basal fifth, the outer on the flank and the smaller of the two, also with two subsimilar elongate spots just before the middle and more approximate, the outer in advance and smaller than the inner; sutural spine long; hind tarsi somewhat longer than the tibiæ. Length 21.0 mm.; width 5.3 mm. California (Truckee).

The single male type has been in my cabinet for many years under the name *Leptura valida* Lec.* The original female type of the latter, from Shoalwater Bay, near the Columbia River, as figured, is very much stouter and has the sides of the prothorax more prominent medially; the prothorax is said to have fine dense punctures, intermingled with some that are coarse and sparse, and the elytral spots are nebulous and in three series. In *oculea* the thoracic sculpture seems to be different, the penultimate palpal joint much shorter, and the elytral spots are smaller, sharply defined and in two series only, there being no trace of maculation behind the middle. Having in mind the differences noted, in conjunction with the different conditions of environment between the northern seacoast, and 6000 feet elevation in the southern Sierras, it is to be presumed that the two species are different. But, in any event, it is quite certain that this type forms a distinct genus in the neighborhood of *Leptalia* and *Centrodera* and is distinctly out of place in *Leptura*. In *Leptura insignis* Fall, from Monterey, which seems to be congeneric, the elytral apices are rounded and wholly unarmed and the elytral ornamentation somewhat more extended, showing that the spiniform sutural angles do not constitute an essential generic character, although unknown in *Leptura*. In the male of *insignis*, the sides of the apical sinuate truncature of the abdomen are acute but dentiform; in *oculea* they are much produced posteriorly, slender and spiniform, this comparison being made with a male of *insignis* in the National Museum; *valida* is also represented in that collection by several typical females, taken near the mouth of the Columbia River.

Stenocorus Fabr.

The use of the names *Stenocorus*, *Stenochorus* and *Toxotus*, in the latest European catalogue, is erroneous in great part, but the matter is cleared up very well by Aurivillius in his recent general catalogue, where *Stenocorus* is shown to be the proper generic name for our species now known as *Toxotus* Serv. The genus *Stenocorus* forms a remarkably isolated group, because of the retraction of the tibial spurs, which occurs nowhere else in the tribe so far as

* There is a female of *oculea*, from Placer Co., California, in the National Museum; this female is much more slender than the same sex of *valida*.

known, except as a mere suggestion in *Leptura matthewsi*. Our species are heterogeneous and form four subgeneric groups as follows:

Third antennal joint very much longer than the fourth; emargination of the eyes extremely feeble, broadly sinuate.....2
Third and fourth joints equal, both much shorter than in the preceding section; emargination deep and subangulate.....4
2—Eyes rather coarsely faceted, larger and more prominent; fossa of the fourth palpal joint short, not attaining base or apex; pubescence even. Atlantic regions.....Group I
Eyes always very finely faceted and relatively small in size.....3
3—Middle coxæ rather widely separated by the broadly tumid mesosternum; elytra substriate, rugose, the pronotum nude and almost sculptureless; last palpal joint shorter, obtriangular, with the fossa entire, very deep; pubescence even. Atlantic regions.....Group II
Middle coxæ very moderately separated as usual; elytra never substriate, the prothorax always densely punctate and pubescent, with much less irregular surface and less acutely angulate lateral tubercles; palpal fossa deep, nearly attaining the apex but not the base; elytral pubescence uneven in lay, partially transverse or oblique. Atlantic and Pacific regions.....Group III
4—Middle coxæ very moderately separated; antennal swellings more pronounced and basal; narrowing of the head more abrupt than in any of the preceding; sides of the prothorax medially not so prominent, arcuate between the constrictions; pubescence even. Atlantic regions and Europe.....Group IV

The influence of geographic habitat is very pronounced in the evolution of these groups.

Group I.

Subgenus **Toxotopsis** nov.

The single known species is the *Leptura cinnamoptera* of Randall (*æsculi* Hald.); it is well known and apparently very constant in form, showing that it is geologically old; it needs no special description at this time.

Group II.

Subgenus **Eutoxotus** nov.

The type of this subgenus is the large and stout *Toxotus schaumi* of LeConte. The body is generally wholly black, the femora alone red, but black at base and apex. Mr. Leng has described a subspecies under the name *croceus* (Ent. Amer., 1890, p. 68), which is

yellow, except the tibiæ, tarsi and antennæ from the second joint outward, which are black. The elytra are peculiarly punctato-rugose and opaque, which, with the remarkable prothorax, renders *schaumi* very distinct, in fact unique, in facies.

Group III.

Subgenus **Stenocorus** Fabr.

This subgenus differs decidedly from all the others in our fauna in being very plastic, indicating a geologically more recent origin, the remarkable diversification of form being due also to its generally mountainous and climatically varied habitat; only two species so far as known inhabit the regions east of the Rocky Mountains. The very numerous species and subspecies may be characterized as follows:

Elytra obliquely truncate at tip, sometimes very narrowly; prothorax generally elongate or at least fully as long as wide 2

Elytra each narrowly and evenly rounded at tip, the sutural angle rounded or very obtuse; prothorax short, with the lateral protuberance less developed 12

2—Elytra vittate 3

Elytra unicolorous 7

3—Elytra blackish, with basal, lateral and apical margins rufo-piceous; beneath black, the abdomen, antennæ, palpi and legs rufo-piceous; head and prothorax black; punctures fine, the elytra rugose. Length 17.5 mm. California (Tejon)..... .....**nubifer** Lec.

Elytra more regularly vittate 4

4—Elytra wholly black, with a fine pale marginal vitta. Male rather stout, the elytra strongly cuneiform, flat above; body, legs and antennæ deep black throughout, except the marginal vitta and the abdomen which is wholly bright rufous; head densely punctato-rugose, subquadrate, the sides behind the eyes at first feebly converging then more strongly to the base, there being a very evident basal constriction; antennæ very nearly as long as the body; prothorax longer than wide, broadly biconstricted and rather acutely tuberculate at the sides, but slightly narrower at apex than at base, finely, closely punctate and with short gray pubescence, bristling with long erect hairs laterally; elytra becoming very prominent laterally toward the humeri, much narrowed at apex, the oblique truncature with a spiniform sutural angle; pubescence short, decumbent, even, streaming obliquely from the suture, coarser and more distinct in about inner half, extremely minute elsewhere, the marginal pale line narrow, even, well defined, extending from base very nearly to the apex; legs not very slender, the anterior and middle tarsi broader than usual. Female not differing much from the male,

except that the antennæ are shorter and more slender. Length (♂ ♀) 12.5–12.8 mm.; width 3.6–4.0 mm. California (Mt. Diablo and Los Angeles Co.).....**lateralis** Csy.

Elytra black, with a discal and marginal pale vitta.....5

Elytra black or piceous, with simply a discal pale vitta, the margins black, varying to almost wholly pale.....6

5—Body moderately stout, feebly convex, slightly shining, black, the elytral vittæ flavo-, the abdomen of the female rufo-testaceous, with the two basal segments black; head finely but strongly, very densely punctate, the eyes small, the sides behind them gradually converging and nearly straight to the neck; antennæ with the third joint much longer than any other; prothorax slightly elongate, feebly narrowed from base to apex, strongly biconstricted, feebly impressed dorsally between the constrictions, finely, very closely and strongly punctate and clothed with pale yellowish-cinereous, somewhat bristling pubescence; elytra strongly tapering from base to apex, one-half wider than the prothorax and between three and four times as long, strongly but not very coarsely punctate, the punctures in great part transversely confluent, the pubescence short, slightly oblique, not dense and inconspicuous, the flavate vittæ not quite attaining the tips, which are obliquely and rectilinearly truncate, with small acute and dentiform sutural angle. Length (♂ ♀) 14.0–21.0 mm.; width 3.3–6.0 mm. New England to Ohio.....**trivittatus** Say

Body black, similar to the preceding, except that it is smaller in size and with shorter legs and tarsi, the sutural black vitta not broadening basally and widely enclosing the scutellum, as it does in *trivittatus*, but narrow, not broader toward the scutellum, which it sometimes barely attains; pale vitta much broader. Length (♂ ♀) 13.5–16.0 mm.; width 3.4–4.4 mm. Ontario and Minnesota.

vittiger Rand.

Body black, flavo-pubescent, the prothorax strongly constricted anteriorly and posteriorly, shining, sparsely punctulate, canaliculate, armed at the sides with a large acute tubercle; elytra narrowed from the base, twice as wide as the prothorax, densely punctulate and rugose, the margin from base almost to the apex and a dorsal vitta on each, evanescent posteriorly, abbreviated anteriorly and bounded on each side by a distinct elevated line, pale, the apices obliquely subtruncate. Length 25.0 mm. Fort Vancouver and vicinity.

flavolineatus Lec.

Body slender, black, finely, densely sericeo-pubescent; lateral tubercles of the prothorax large, obtusely rounded, the constrictions strongly marked; elytra with the pubescence transverse, " testaceous, suture, discoidal stripe and side margin blackish " [in diagnosis (Tr. Am. Ent. Soc., 1874, p. 67)], " the discoidal vitta confined to the upper plane of the elytra and the lateral space between it and the margin ferruginous " [in subsequent remarks (l. c.)], the tips obliquely subtruncate; abdomen of the male ferruginous, of the female blackish, with silvery pubescence; antennæ (♂) stout and as long

as the body, or (♀) more slender and a little more than half as long. Length 13 mm. Oregon, Vancouver and British Columbia. **virgatus** Lec.

6—Male slender, deep black, rather strongly shining, the abdomen very slender, pale ferruginous, the elytral vitta rather near the suture and becoming broad basally, gradually fine posteriorly and disappearing before the apex; head densely punctato-rugose, briefly conical basally, the eyes small; antennæ slender, black, not quite as long as the body, the basal joint much longer than the fourth, third longer than the fifth; prothorax elongate, narrowed but very little from base to apex, the constrictions and lateral tubercle well developed; surface scarcely at all canaliculate, finely, closely punctate and with stiff, moderately abundant, yellowish-cinereous pubescence; elytra strongly, sinuously tapering, one-half wider than the prothorax and between three and four times as long, minutely punctate, sparsely laterally, with very short, not dense and rather inconspicuous cinereous pubescence, laid obliquely from the suture to the outer limit of the pale vitta, almost wanting thence to the sides, the lateral bead pale basally, the apical truncature very narrow, oblique, the sutural angle obtuse; abdomen bright ferruginous, very slender and cylindric, the fifth segment broadly arcuato-truncate. Female larger and stouter than the male, with only feebly tapering elytra, nearly similar otherwise but with rather denser pubescence, still smaller eyes and slightly shorter though barely more slender antennæ, about three-fourths as long as the body; abdomen much broader, less cylindric, more pubescent, less bright though pale ferruginous, the apical margins of the segments feebly infuscate; fifth ventral broad and transverse, the obtuse apex with the surface arched horizontally for a short space near each side to receive the elevated sides of the concave genital segment, the surface apically also feebly impressed at the middle; last dorsal broadly, arcuately truncate, with broadly rounded angles, the notch at the middle broad, very feeble and barely traceable. Length (♂) 11.5, (♀) 14.0 mm.; width (♂) 2.8, (♀) 4.0 mm. California (Lake Co.).....**pacificus** n. sp.

Male small and still more slender, nearly as in the preceding, except that the eyes are more prominent, the antennæ still more slender and finely filiform, with the basal joint much shorter and more slender, but little longer than the fourth, the third barely at all longer than the fifth and the sutural black vitta very narrow and more indefinite, the broad dark marginal vitta not black but pale brown, blackish at the humeri, the abdomen similar but apically much more sparsely punctate, with the fifth segment longer, being a little longer than the fourth and more strongly and evenly rounded throughout the apex. Female differing from the same sex of *pacificus*, which it nearly resembles in coloration, in its much smaller size and narrower build, the antennæ as in the male but a little shorter, the abdomen narrower, very much less pubescent, more shining, blacker, the segments rufo-piceous basally or in a transverse medial band, the fifth segment more angulate at apex, with the arches and median

impression obsolete. Length (♂) 8.3–9.7, (♀) 9.5 mm.; width (♂) 1.9–2.3, (♀) 2.7 mm. California (Lake Co.)...**tenellus** n. sp.

Male unknown. Female as in *pacificus* but shorter and relatively stouter, the coloration, sculpture and vestiture nearly similar, the antennæ similar and with a much longer basal joint than in *tenellus*, the third joint less elongate than in *pacificus*, piceo-rufous in color, with the basal joint black, slender, two-thirds as long as the body; prothorax much stouter and shorter than in either of the preceding, barely as long as wide, more narrowed to the more arcuate apex, nearly similar otherwise though with rather more sharply angulate tubercles; elytra nearly as in *pacificus*, except that the sutural black vitta fades out near the scutellum; abdomen as in *pacificus*, except that the fifth segment is evenly rounded throughout at apex and not broadly, obtusely angulate, and without trace of the two apical archings of the surface; legs fusco-ferruginous, black distally; last dorsal plate of the female broadly rounded at apex, becoming rather deeply sinuate at the middle. Length (♀) 13.8 mm.; width 4.0 mm. California (Lake Co.).....**hesperus** n. sp.

Male unknown. Female in form nearly as in the preceding but with relatively much narrower head and prothorax, the former being less developed than in any other species; eyes moderate, separated by nearly three times their own width; antennæ very slender, two-thirds as long as the body, very pale flavo-testaceous in color throughout, the basal joint scarcely visibly less pale, the fourth relatively shorter than in the preceding; prothorax much narrower, longer than wide, the pubescence short, rather coarse, golden, not dense; elytra nearly as in *hesperus* but wholly pale in color, except a faint blackish streak from the humeri fading out near basal fourth; abdomen pale, densely punctulate, the bases and apices of the segments nubilously darker, the fifth segment much shorter and with two small sinuses nearly as in *pacificus* but smaller and more widely separated; last dorsal segment very different, being more narrowly and very evenly rounded at apex, without sinus. Length (♀) 12.0 mm.; width 3.3 mm. California (Lake Co.).....**parviceps** n. sp.

7—Elytral flanks shining, rather coarsely, sparsely punctate, with few if any minute punctules; pubescence throughout rather inconspicuous.....8

Elytral flanks alutaceous as elsewhere, because of the very dense minute punctulation, sometimes with a few slightly larger punctures sparsely intermingled; general pubescence long, denser, more diversely laid and conspicuous; antennæ differing sexually, being much longer and heavier in the male as in *lateralis*.....11

8—Elytral vestiture even from the suture nearly to the limits of the more shining and subglabrous flanks, composed of short, oblique, moderately close and rather inconspicuous hairs nearly as in the four preceding species; antennæ not differing much sexually, resembling the *trivittatus* and *pacificus* groups.....9

Elytra each with a narrow axial line near inner third, in which the hairs become oppositely oblique as in a cow-lick; antennæ differing sexually, being much longer and heavier in the male.....10

9—Elytra with an unusually wide oblique apical truncature, this being more than a third as wide as the elytron at three-fourths from the base, the sutural angle minutely dentiform, the elytra very much more gently and feebly tapering posteriorly than in the females of the three preceding, where the truncature is relatively very much narrower. Female type black, with wholly ferruginous elytra, legs and antennæ, the abdomen black, with the basal parts of the segments obscurely rufescent, wholly ferruginous apically; head, eyes and antennæ nearly as in the preceding; basal joint of the latter but little more than twice as long as wide; prothorax but little longer than wide, a good deal narrowed from base to apex, with the constrictions deep, the tubercle pronounced; surface finely, densely punctate, not densely cinereo-pubescent and differing from those described above in being concave medially; elytra much less than one-half wider than the prothorax, between three and four times as long, distinctly tapering throughout; pubescence in less than inner half obvious but very short, decumbent and evenly oblique throughout, almost wanting thence laterally, the punctures very fine and close internally, with some that are slightly larger in great part serial in arrangement basally, becoming notably larger and deep laterally and fine posteriorly; fifth ventral broadly angulate at apex, not impressed or otherwise modified; last dorsal broadly arcuato-truncate, without obvious median emargination or sinus. Length (♀) 10.3–11.8 mm.; width 2.9–3.3 mm. California (Lake Co.).....**truncatulus** n. sp.

Elytra with the apical truncature very narrow as usual in this part of the subgenus, distinctly less than a third as wide as the elytra at three-fourths from the base; form otherwise nearly similar. Female type rather slender, black, the entire elytra and legs pale brownish-testaceous, the antennæ dark rufo-piceous throughout, the basal joint not at all darker, the abdomen deep black, abruptly testaceous behind the third segment; head strongly and densely punctato-rugose, with very moderate eyes, the sides behind them evenly and gently converging; antennæ shorter than in the preceding, barely more than half as long as the body; prothorax just visibly elongate, with fine deep separated punctures, feebly conical, deeply biconstricted and with a distinct dorsal channel connecting the impressions, the pubescence short, coarse, not dense; elytra very feebly tapering from the gradually more prominent humeri, one-half wider than the prothorax and nearly four times as long, the vestiture as in the preceding, distinct in about internal, almost wholly wanting in external, half; abdomen shining and finely punctate, not densely pubescent; legs slender. Length (♀) 9.5 mm.; width 2.7 mm. California (Sta. Cruz Mts.).. .....**apiciventris** n. sp.

10—Form more rhomboidal than the two preceding, black, the entire elytra pale and uniform brownish-rufous, the abdomen rufous in the male; legs and antennæ wholly ferruginous, the basal joint of the latter scarcely at all darker than the remainder; head punctato-scabrous, with longer and closer pubescence than in the preceding, the eyes small as usual; antennæ (♂) rather thick, four-fifths as

long as the body; prothorax distinctly elongate, subcylindric, but very little narrower at apex than at base, moderately biconstricted, the lateral tubercles obtusely rounded; punctures small but strong, very dense, the sulcus obsolete, the pubescence long, rather dense but not quite concealing the surface sculpture; elytra fully two-thirds wider than the prothorax and not distinctly more than three times as long, very rapidly tapering from the prominent though rounded humeri to the apex, finely, rather closely punctate, except laterally, more sparsely basally and with numerous rather coarse and widely scattered punctures throughout, though especially toward base and closer on the flanks; pubescence golden-cinereous, short, not very dense, largely absent laterally. Male with the abdomen moderately narrow, slightly tapering, clothed not very densely with distinct pale pubescence; dorsal pygidium obtusely rounded, the surface finely, not very densely punctate, with the median line feebly cariniform, nearly flat elsewhere. Length (♂) 11.5 mm.; width 3.6 mm. California (locality not recorded).....**rufipennis** n. sp.

Form slightly more slender than in *rufipennis*, a little smaller in size but similar in coloration, except that the legs and antennæ are dark rufo-piceous, the basal joint of the latter black; head nearly similar, the antennæ (♂) nearly similar but rather more tapering distally, or (♀) much shorter and more slender than in the male, three-fifths as long as the body; prothorax narrower, still more elongate and barely at all narrower at apex than at base, similarly sculptured but with the pubescence much less abundant and shorter; scutellum narrower; elytra shorter, three-fourths wider than the prothorax and three times as long, the short pubescence nearly similar, the sculpture finer, the intermingled larger punctures less evident, almost wanting in the female, which also has numerous fine punctures, as well as larger, on the flanks; abdomen rufous in both sexes, blackish laterally toward base in the female; dorsal pygidium (♂) finely, sparsely punctate, without trace of a fine axial carinule, but with an elongate tubercle near each side; last dorsal (♀) broadly rounded, more transverse medially at apex but without medial sinus or emargination, the last ventral broadly rounded, feebly impressed medially near the apex. Length (♂♀) 10.5–12.0 mm.; width 2.9–3.4 mm. California (locality not recorded).....**flaccidus** n. sp.

11—Last dorsal (♀) narrow, gradually and arcuately tapering to the narrowly bilobed apex, the median notch deep, subparallel, rounded at the bottom and slightly deeper than wide. Body rather slender, black, the elytra pale brownish-yellow, the abdomen (♀) rufous, with the two basal segments wholly or in part blackish; legs more or less pale piceo-testaceous, the antennæ pale, with the basal joint black; head densely punctate, the eyes small but rather prominent, the front closely pubescent, striate medially; antennæ (♂) moderately thick, not quite as long as the body, or (♀) a little thinner and three-fifths as long as the body; prothorax elongate, distinctly narrower at apex than at base, strongly biconstricted, minutely and very densely punctate, broadly, feebly impressed along the middle and with long and very dense golden pubescence, forming

a strong double median cow-lick which does not attain base or apex; elytra one-half wider than the prothorax and three times as long, tapering in both sexes, everywhere minutely, closely punctate and pubescent, the hairs rather long, dense, golden, generally nearly transversely laid, with one or two more prominent irregular lines of diverse lay. Length (♂ ♀) 11.5–12.5 mm.; width 3.1–3.6 mm. California (probably the coast regions)..... **aureatus** n. sp.

A—Nearly similar to the preceding but a little stouter and with silvery and not golden thoracic vestiture, which is however similarly dense and thrown up in two similar medial longitudinal cow-licks, differing distinctly in having the entire antennæ, including the basal joint, very pale yellowish-testaceous in color, similar otherwise to the male antennæ of *aureatus*, except that the fourth joint is still a little shorter, being less than twice as long as wide; eyes very slightly less prominent, similar otherwise; prothorax similar in its sculpture and elongate form; elytra similar in form, less alutaceous, the minute punctures less dense or distinct, especially on the flanks, the marginal bead blacker, pale basally; abdomen similar, the basal joint of the hind tarsi distinctly longer. Length (♂) 12.0 mm.; width 3.5 mm. California (locality unrecorded),—Levette.

gilvicornis n. subsp.

Last dorsal (♀) broader basally, more rapidly narrowing and with slightly arcuate sides to the relatively more narrowly bilobed tip, the median nick broader and shallower, angulate and forming a right angle; body larger and much stouter, black, the elytra darker red-brown, the abdomen (♀) ferruginous, blackish at the sides basally; legs brownish-testaceous, the antennæ darker, brownish, with the basal joint black; head nearly as in the preceding but with smaller and less prominent eyes and scantier pubescence, the antennæ (♀) scarcely more than one-half as long as the body; prothorax larger and stouter, not quite so elongate and rather more conical but otherwise similar, except that the pubescence is paler yellowish-cinereous and much less dense, not concealing the sculpture, which is a little coarser; elytra nearly as in the preceding but broader and with shorter, less golden but more sericeous pubescence, which is similarly irregular. Length (♀) 12.7 mm.; width 3.9 mm. California (locality unknown)..... **sericatus** n. sp.

Last dorsal (♀) much broader, parabolic in form, the relatively much narrowed apex bilobed, the nick angular and nearly as in *sericatus*, the body nearly similar in form, coloration and sculpture but still stouter; head similar but with still shorter and less conspicuous pubescence, the antennæ similar; prothorax shorter, stout, only very little longer than wide, narrower at apex than at base, moderately biconstricted, the obtuse and very moderate tubercles rather more anterior, the punctures finer and denser, the pubescence short, still more cinereous and not concealing the surface; elytra as in *sericatus* but broader, the grayish pubescence still shorter and the irregular lines much less evident. Length (♀) 13.5 mm.; width 4.25 mm. Utah..... **subpinguis** n. sp.

Last dorsal (♀) long and relatively more parallel, rapidly and obtusely rounding at the apex and broadly, very faintly and gradually sinuate medially; body larger and much stouter than in any of the preceding species of this group, black, the abdomen black, the last three segments dark and obscure rufous; elytra throughout brighter rufous, the sutural and the lateral double beading, as well as the extreme apices, black; vestiture inconspicuous, golden, unusually short; legs black throughout; head very densely, rugosely sculptured and dull, the eyes small; antennæ (♀) short and slender, deep black throughout, but little more than half as long as the body, of the usual structure; prothorax large, a little longer than wide, strongly biconstricted, the median obtuse prominences conspicuous; punctures small and close but with polished interspaces; elytra about twice as long as wide, tapering, the larger punctures, scattered among the very fine dense punctulation, smaller than usual; pubescence rather sparse and very inconspicuous but arranged as in *aureatus* and allies; legs long and very slender. Length (♀) 14.5 mm.; width 4.8 mm. Oregon (Clackamas Co.) . . . **oregonensis** n. sp.

" Black; head and thorax lanate; venter and elytra testaceous, the latter entire. Length 12 mm.; width 3 mm. Oregon." . . . . **vestitus** Hald.

12—Color testaceous, extremely minutely pubescent; head fuscous; prothorax not at all longer than wide, bisinuate at the sides, the lateral tubercle feebler than usual and obtusely rounded, the surface convex, moderately constricted anteriorly and posteriorly, vaguely canaliculate; elytra slightly punctulate, almost parallel, the apex rounded; eyes small but rather convex, finely faceted; antennæ with the third and fifth joints equal, the fourth two-thirds as long; the head is feebly narrowed behind but not rounded on the sides. Length (♀ ?) 15.0 mm. Yellowstone Basin.

obtusus Lec.

Color deep black throughout, except the elytra, which are very pale luteo-albid, the suture and a lateral vitta at the upper part of the flanks black, the elytral apex and also the abdomen black; head very densely punctato-scabrous, with rather long and coarse but not dense hairs, fusco-cinereous in color, the eyes small and but feebly prominent, the sides behind them short, converging and evenly though feebly arcuate; antennæ (♂) rather heavy, as long as the body, the third joint much longer than the fifth; prothorax shorter than in any other species, not as long as wide, almost as wide at the feebly arcuate apex as at base, rather deeply bisinuate at the sides, with the tubercle strong though very obtuse and broadly rounded; apical dorsal constriction broad and shallow, the basal deeper and more angulate, the median line barely at all impressed; punctures fine, close, the pubescence as on the head, not concealing the sculpture; elytra not quite one-half wider than the prothorax and fully four times as long, rapidly tapering from the prominently rounded humeri to the apex, finely, feebly and not densely punctate and with very small and rather sparse, evenly distributed and very inconspicuous hairs. Length (♂) 11.8–12.0 mm.; width 3.5–3.7 mm. Washington State . . . . . **brevicollis** n. sp.

It is almost certain that *truncatulus* and *apiciventris*, in spite of their uniformly pale elytra, belong to the *pacificus* group of vittate species; this group, which seems to be peculiar to the maritime parts of California, is somewhat more inconstant in elytral ornamentation than either the more northern *virgatus* or the eastern *trivittatus*. *Rufipennis* and *flaccidus*, which are mutually closely allied, are in a measure intermediates between the *virgatus* and *pacificus* groups, and the *aureatus* group. Haldeman's entire description of *vestitus* is quoted above, and, as can be seen, it is totally ambiguous and useless; it is probable also that the original type has not been preserved, the name for many years having been applied to all the conspicuously pubescent Pacific coast species having uniformly pallid elytra. As its habitat is much more boreal than that of any above noted, except *oregonensis*, which is much larger, it probably has not been redescribed in the table. *Obtusus* Lec., is a peculiar type, and from the fact that *brevicollis* is founded on the male and *obtusus* probably on the female, it might be conceived that the former is at most a subspecies of the latter; but there are so many incongruities, generally not sexually diverse, notably the long pubescence of the head and prothorax in *brevicollis*, that there cannot be very much doubt, apparently, of the distinctness of the latter. The female elytra in forms having strongly tapering male elytra, are not "parallel" in any other known species, though very nearly so in the subgenerically different *cinnamopterus*.

Mr. Leng (Ent. Amer., 1890, p. 68) notes a form of *vestitus*, which he names *ater;* as it is not described this must be considered purely a manuscript name. If the elytra are wholly black, there can be but little doubt that closer observation would prove it to be a different species, as variation in the genus seems to assume the diminishing form rather than intensification of elytral coloration.

Group IV.

Subgenus **Anisorus** Muls.

The only species of our fauna entering this subgenus, which comes very close to being a distinct genus, is the *Toxotus cylindricollis* of Say (*dentipennis* Hald., and *dives* Newm., also var. *atratus* Hald.), rather widely distributed in the Atlantic regions but not at all common. The prothorax distinctly tapers from base to apex and is

conical rather than cylindrical, but Say's species has probably been correctly identified.

Evodinus Lec.

Besides the type of this genus, named *Leptura monticola* by Randall, there is another rather closely allied species in my cabinet as named below. The genus *Evodinus*, of recent years suppressed and united with *Pachyta*, is valid, the prothorax being wholly as in *Stenocorus* and not at all like *Pachyta*, and the elytral ornamentation as in many true Lepturids; it is abundant in the European fauna, numerous species being listed under the name *Evodinus* in the recent European catalogue.

Evodinus vancouveri n. sp.—Male very slender, deep black, dull and finely, very densely punctate, the elytra slightly shining though minutely, deeply and very closely punctured, black, the humeri and a broad and very irregular common sutural vitta, from behind the scutellum to apical sixth or seventh, pale luteo-albid, the vitta contracted near basal fourth, linearly expanded behind the middle and bifurcating slightly at its posterior limit; head nearly as in *monticola*, the antennæ very slender, black throughout and as long as the body; prothorax as in that species but narrower, more elongate and very much less densely pubescent; elytra similar but narrower and with the small decumbent hairs sparser. Female throughout in form, sculpture and ornamentation nearly as in the female of *monticola*, except that it is less stout and that the prothorax is much narrower, more elongate and less pubescent, the antennæ deep black, and that there is a bilaterally abbreviated black basal fascia involving the scutellum; the antennæ are much shorter than in the female of *monticola* and especially with shorter outer joints, the hind tarsi notably shorter. Length (♂) 9.8, (♀) 9.5 mm.; width (♂) 2.8, (♀) 3.2 mm. Vancouver Island.

The difference between the almost wholly black elytra of the male and the pallid, laterally distantly trimaculate elytra of the female, is remarkable and never occurs, so far as noted, in *monticola;* the apex also is black, and the discal spot near basal fourth in the female is very small.

Parapachyta n. gen.

The genus for which this name is proposed is also allied to *Pachyta*, but is very different in general habitus and in many important structural features, the body being much more elongate and the elytra more nearly parallel, never so peculiarly cuneiform as in *Pachyta*. It differs radically from *Pachyta* in the more de-

veloped head, this being relatively unusually small in that genus, in its very large, prominent and coarsely faceted eyes, more elongate and even more acutely tuberculate sides of the prothorax, system of sculpture and many other characters, of more or less weight from the generic viewpoint. Its type is *Pachyta spurca* Lec., a large pallid and coarsely sculptured species of the true Pacific coast fauna.

Gaurotes Lec.

If we limited this genus to those species having a protuberant mesosternum, the only representatives in my cabinet would be *cyanipennis* Say., and the Mexican *multiguttatus* Bates, which diverge widely from each other in sculpture, coloration and vestiture, showing how ineffectual it may sometimes be to base genera upon a single character, however important it may seem. If, however, we entirely abandon the mesosternum, the inconstancy of which has long been known, and look broadly at the species *cyanipennis*, *cressoni* and *abdominalis*, we find a constant peculiarity of habitus, separating them widely from *Acmæops*, and caused by the short broad form of body, relatively small and transverse, apically much narrowed and strongly, transversely biconstricted prothorax and very small head, with the front not prolonged. This composite habitus constitutes the real generic difference between *Gaurotes* and *Acmæops* and, in this light, examining *Acmæops thoracica*, *bivittata* and *nigripennis*, we find the identical facies of *Gaurotes*, showing that they should form part of *Gaurotes* and not of *Acmæops*. The variety of sculpture and ornamentation within the limits of *Gaurotes*, thus amplified, becomes very marked, but to show that this fact has very little significance here, other than to prove that the genus is composed of several subgeneric groups —three in number as far as now known, represented by *bivittatus*, *multiguttatus* and *cyanipennis*,—we have only to point out that the greatest difference of this kind lies between the only two species that are typical in regard to mesosternal structure; that is, *cyanipennis* and *multiguttatus*, one with shining metallic, simply and sparsely punctate and virtually glabrous elytra, the other with duller black elytra, having dual vestiture, consisting of condensed clusters of decumbent white hairs, with others erect, stiffer and black intermingled. As proving the dominant importance of

general bodily structure, however, it is to be noted that these two species have the form, size and habitus of the elytra, prothorax and head virtually identical; it might be further noted that it is only in those forms having protuberant mesosternum, that the elytra become bidenticulate or biangulate at apex, this being very pronounced in *multiguttatus* and feebly evident in *cyanipennis*, all the other species having broadly rounded tips, with sharply angulate but wholly unproduced sutural angle.

The genus *Gaurotes*, therefore, will be made up in our fauna of the species *cyanipennis* Say,—the type of the genus,—*cressoni* and *abdominalis* Bland, *thoracicus* Hald., *bivittatus* Say, *nigripennis* Lec., this being by no means a variety of *bivittatus* but a distinct and valid species, of which *varians* Lec., is probably the male, *fusciceps* Lec., which is also a valid species and not a variety of *bivittatus*, and the following two, the first of which is closely allied to *bivittatus*, being almost identical in ornamentation and sculpture:

Gaurotes oblongus n. sp.—Form, coloration, two black vittæ on each elytron and elytral sculpture of rather coarse, deep, moderately separated punctures, as well as the very sparse vestiture of infinitesimal hairs throughout, as in *bivittatus;* head relatively still smaller, only two-thirds as wide as the prothorax, black, testaceous before the antennæ and with a large transverse basal area of the same color, strongly, densely sculptured, perfectly flat between the small eyes, which are scarcely at all prominent, the moderately retracted tempora at first subparallel, then converging to the base; antennæ longer and thicker, black, the first and fifth joints relatively longer; prothorax testaceous, larger, more transverse, a third wider than long and evidently wider at base than across the ante-median lateral prominences; legs thick, wholly black. Length (♀) 9.8 mm.; width 4.2 mm. Nebraska.

Differs from *bivittatus* in its larger size, relatively smaller head, with much less prominent eyes, in the red area of the occiput, thicker antennæ, with much more elongate basal joint, in the very much thicker legs and tarsi and basally broader prothorax. The subgeneric group to which it belongs includes also *thoracicus* Hald., *nigripennis* Lec. (*varians* Lec.) and *fusciceps* Lec., and has the vittate form of ornamentation predominating as in *Disonycha* of the Chrysomelidæ, where numerous true and not closely related species have nearly similar or virtually identical elytral ornamentation.

The following species is allied to *cressoni* but is larger and much stouter:

Gaurotes lecontei n. sp.—Oblong, convex, glabrous above, very shining, black, the elytra bluish-green; antennæ and legs black, the femora broadly banded with testaceous near the tip; abdomen wholly black; head small, with rather close-set coarse punctures, mingled with smaller ones, the surface smooth anteriorly; antennæ, eyes, tempora and prothorax as in *cressoni*, the first a little more slender; elytra three-fifths longer than wide, feebly cuneiform, fully twice as wide as the prothorax, one-half longer than wide, obtusely rounded behind; punctures sparse, separated by from three to six times their diameters, coarse basally, becoming very minute apically; apices not truncate; under surface shining, minutely punctate, more strongly and rather closely on the sterna, very remotely on the abdomen; mesosternum not protuberant. Length (♀) 11.5 mm.; width 5.4 mm. Oregon.

Differs greatly from *cressoni* in the characters stated, as well as in the black and not bright red abdomen and very much sparser, less coarse and antero-posteriorly more unequal elytral punctures.

The genus *Acmæops*, as at present constituted, is even more composite than *Gaurotes;* for, removing *bivittata*, *thoracica* and related species from *Acmæops* and placing them in that genus, where they evidently belong as stated above, there still remain three generic groups of species definable as follows:

Front broad, not or scarcely prolonged, the genæ short; pronotum never bitumorose; elytra not or rarely at all truncate at tip.....2
Front narrowed and more or less prolonged as in *Ophistomis*, the genæ longer; pronotum generally bitumorose basally, the elytra nearly always sharply sinuato-truncate at tip.....3
2—Body short and broad in form, the antennæ shorter and notably thick. [Type *Acmæops tumida* Lec.].....**Brachysomida**
Body elongate and slender, the antennæ long, slender and filiform. [Type *Leptura longicornis* Kirby.].....**Leptacmæops**
3—Body smaller, shorter and relatively broader than in *Leptacmæops*, the antennæ less attenuate. [Type *Leptura proteus* Kirby].
Acmæops

These three groups differ markedly among themselves in habitus, as well as in special structural features, with no intermediate forms, proving them to have rather the nature of genera than mere sections of a single genus. The only one common to the nearctic and palæarctic faunas is *Acmæops*, the species *pratensis* Laich., with many synonyms, being common to the two continents. *Brachysomida* is confined to the Pacific fauna of North America, while *Acmæops* and *Leptacmæops* are purely subarctic, descending to the southward along the Rocky Mountain system. *Dinoptera* Muls., may be

closely related to *Brachysomida*, but it can be inferred, at least, that the two are not identical from the fact that in the type of *Dinoptera*, the prothorax is much more elongate and usually bright red, while in *Brachysomida*, the head and prothorax are invariably intense black, the only parts subject to color variation being the elytra, abdomen, legs and antennæ; these variations are of no value, even as fixing varieties or so-called aberrations; the antennæ in *Dinoptera collaris* are much longer than in *Brachysomida*.

Brachysomida n. gen.

The species of this genus are exceedingly numerous, so much so that the variety of form, or the apparent instability, revealed by successive arrivals of new material, led Dr. LeConte to believe that those he had described were in great part united by intermediates, and he thereupon proceeded to suppress many of them, refraining at the same time from defining any more, so that only about a third of the species now in my collection have ever been described. But LeConte did injustice to the realities of nature in thus suppressing so much of his more discriminative work, whatever the external influences or internal reasoning that may have moved him; in short, the proportion of synonymy now accredited to him in the lists, almost everywhere in the Coleoptera and even where self-imposed, is somewhat largely without warrant and untrue, as is fast becoming evident.*

I have not attempted to indicate other than a specific status for more than a few of the following forms, for as they are all amply distinct in appearance, I am uncertain which to regard as species under the present day ultra-radical conception of that term, and which to put in subordinate station, leaving such questions for future determination. It can only be said that those forms, as for instance *trinitatis*, that I have personally been able to collect in considerable number in their native environment, betray no marked variability beyond the mysterious color dimorphism characterizing the genus, the majority of the examples of that species of both sexes having uniform deep blue elytra, while about a third of them have uniform pale red-brown elytra, without intermediates in color,

*Mr. Pierce, of the National Museum, has recently found it necessary to reinstate several of the LeContean species of *Thecesternus*, that were suppressed by the author himself.

showing that it is a true dimorphism and not mere variability, as ordinarily conceived. This dimorphism also pervades *Leptacmœops*, with a few notable exceptions, such as *falsa*, but is not so evident in the true *Acmœops*, such forms as *discoidea* and *directa*, being remarkably constant in coloration. It is a singular condition, where some species are subject to radical dimorphism and others, evidently congeneric, are absolutely constant within the narrowest limits; it simply indicates what may some day be recognized as subgeneric groups within the genus.

Prothorax rather acutely and abruptly though not strongly tuberculate at the sides; body very deep black throughout, the elytral punctures coarse 2

Prothorax with the sides very feebly, obtusely prominent and rounded invariably before the middle and just behind the apical constriction, which is always large, deep and very evident; elytra never deep black and very moderately sculptured, almost always with more or less blue, greenish or æneous coloration 3

Prothorax as in the preceding group but having the lateral prominence virtually wanting; body otherwise as in section 3 19

2—Form stout, oblong, rather convex, shining, deep black, the elytra more blue-black than the anterior parts; upper surface glabrous, the under with a few small scattered hairs, the legs and first five antennal joints with short and close-set stiff hairs, the remainder of the antennæ minutely, very densely puberulent and dull, the fifth joint claviform, with an elongate opaque spot on the under surface in nearly apical half; head densely and moderately punctured, the tempora converging and arcuate behind the eyes; antennæ (♂) extending to apical third of the elytra, the third joint longer than the fourth but shorter than the fifth; prothorax wider than long, evenly convex, with small but strong scattered punctures, the median line in part finely striate; scutellum nude and shining, elongate, acutely ogival; elytra parallel, not quite twice as long as wide, three and one-half times as long as the prothorax and three-fourths wider, rounded at apex, parallel, the sutural angle right but blunt; punctures coarse, irregular, in part somewhat confluent transversely but generally widely separated; abdomen minutely, sparsely punctate. Length (♂) 8.0 mm.; width 3.0 mm. Washington State.

atra Lec.

Form not so stout, convex, intense black throughout, glabrous above, the small sparse hairs of the under surface so minute as to be barely discoverable; legs with sparse and very minute hairs; head and prothorax strongly, densely, subrugosely punctate, the front depressed between the antennæ and the eyes; antennæ (♀) thick, not extending to the middle of the elytra, the third joint shorter than the fourth and two-thirds as long as the fifth; sides only very feebly converging but strongly arcuate between the eyes and the base; prothorax very short, one-half wider than long, much narrowed but

virtually not at all constricted at apex, with a polished punctureless space before the middle of the base; scutellum nude, polished, larger and much more obtuse than in *atra;* elytra three-fourths longer than wide, between three and four times as long as the prothorax and less than one-half wider, parallel, rounded obtusely at apex, the punctures even, only moderately coarse but very deep and perforate, closer than in *atra,* separated generally by but little more than their diameters; abdomen minutely, extremely feebly and remotely punctulate. Length (♀) 6.8 mm.; width 2.5 mm. Colorado (Summit of Mt. Arapahoe—elevation nearly 13000 feet) ..... **morata** n. sp.

3—Vestiture dark or blackish in color, inconspicuous 4

Vestiture pale cinereous to yellowish, always distinct 5

4—Body stout, oblong, moderately convex, deep black and rather shining throughout, the elytra dark steel-blue, sometimes violaceous toward the sides; pubescence dark, abundant but not distinct, long, fine and erect on the prothorax; head deeply and very densely punctate, the prothorax scarcely less strongly but loosely, the elytra rather coarsely, very deeply and closely, gradually more finely posteriorly; antennæ (♂) a little more or (♀) somewhat less than half as long as the body, thick, the third and fourth joints equal in both sexes and much shorter than the fifth; prothorax rather large, wider than the head, evidently shorter than wide, strongly constricted at apex, with an irregular and impunctate but otherwise unmodified median line, which does not attain the apex; scutellum closely nigro-pubescent; elytra oblong, parallel, three-fourths wider than the prothorax to nearly twice as wide, obtusely rounded at apex, the sutural angles right; abdomen minutely, sparsely punctulate, sometimes picescent. Length 8.8–11.0 mm.; width 3.5–4.3 mm. California (northern) ..... **viola** Lec.

Body narrower, much more elongate and smaller in size, less convex, shining, deep black, the elytra brighter, dark violaceous-blue, the vestiture similar; head more finely, very densely, the prothorax still more finely, toward the sides closely, dorsally rather loosely, punctate, the elytra punctured and with obscure dark pubescence nearly as in *viola;* antennæ longer, extending almost to apical third of the elytra (♂) or beyond the middle of the body (♀), thick, the joints as in *viola;* sides behind the eyes converging and nearly straight; prothorax as in the preceding; elytra twice as long as wide, parallel, gradually obtusely rounded at tip, the sutural angles right and sharp, three-fourths to four-fifths wider than the prothorax; abdomen piceous-black, the fine and very feeble punctulation and fine fuscous hairs rather closer than in *viola;* second joint of the hind tarsi shorter and much more strongly narrowed from apex to base than in that species. Length 8.7–10.0 mm.; width 2.9–3.7 mm. California (locality unrecorded) ..... **celestina** n. sp.

5—Elytral punctures sparser, separated basally by twice their own diameters or more 6

Elytral punctures distinctly dense throughout 15

6—Large species, more or less exceeding 10 mm. in average length 7

Smaller species, generally much under 10 mm. in length 8

7—Form robust, black, not at all densely clothed with long cinereous pubescence; head densely punctate, the prothorax moderately, the latter convex, constricted at apex, the sides before the middle abruptly rounded, parallel posteriorly, the surface obsoletely canaliculate; elytra subdepressed dorsally, the sides obliquely impressed, the apices subobliquely attenuate, then obtusely rounded, tinged with violaceous, less densely punctate, the punctures finer posteriorly; legs densely fusco-pubescent; antennæ fuscous, black at base. Length 14.2 mm. Oregon..... **mollipilosa** Lec.

Form stout, the elytra less flattened dorsally than in the preceding, with the sides less impressed behind the humeri and less broadly rounded at the elytral apex, black, pubescent; head densely punctate and canaliculate; prothorax densely punctate, the median line smooth posteriorly, shorter than wide, the sides anteriorly notably rounded, strongly margined, abruptly constricted and briefly tubulate at apex; elytra rather closely punctate, more finely posteriorly, parallel, obtuse at apex. Length 12.5 mm. California (Sacramento). [*fusca* Lec.—founded also upon a single specimen, taken in the same locality and by the same collector, is probably only the paler dimorphic form of *lugens*]..... **lugens** Lec.

Form stout, moderately convex, shining, deep black, the elytra with feeble greenish-metallic lustre; head very densely punctate, the sides feebly arcuato-convergent from the scarcely prominent eyes to the base; third and fourth antennal joints short, equal, barely more than twice as long as wide; prothorax wider than long, only moderately constricted at apex, moderately and arcuately swollen at the sides before the middle, evenly convex, with the very moderate punctures well separated and a smooth median line except anteriorly, the pubescence notably long, yellowish, very coarse and conspicuous; elytra parallel, conjointly very obtusely rounded at tip, three-fourths longer than wide, less than twice as wide as the prothorax, the punctures well separated, deep and perforate, rather coarse, becoming small but still strong apically, the hairs rather long, coarse, bristling and yellowish; abdomen finely and feebly but rather closely punctulate. Length 11.5 mm.; width 4.0 mm. California (San Francisco)..... **tumida** Lec.

8—Elytra black, with the feeblest possible trace of æneo-viridate lustre laterally, stout, somewhat grayish-black throughout, the pubescence everywhere unusually long, rather coarse, yellowish-cinereous and conspicuous, bristling and less dense on the elytra, unusually long on the abdomen; head finely but deeply, densely punctate, the sides behind the eyes very feebly converging to the base; antennæ thick, the equal third and fourth joints barely twice as long as wide; prothorax nearly as long as wide, the apex broadly and deeply constricted but only very moderately narrowed, the sides very broadly and feebly rounded, not prominent; surface finely, rather sparsely punctate, with a smooth median line behind the middle; elytra short, barely three-fourths longer than wide, strongly tapering from base to the rather narrowly rounded apex, scarcely one-half wider than the prothorax, the punctures notably coarse and sparse basally,

becoming unusually rapidly fine, feeble and close-set posteriorly; abdomen feebly but rather closely punctulate. Length (♀) 9.0 mm.; width 3.25 mm. Colorado.....**lanatula** n. sp.

Elytra with strong æneo-cupreous to pure green metallic lustre; third and fourth antennal joints short, subequal and about twice as long as wide throughout.....9

Elytra with pure deep greenish-blue to violaceous lustre, except in the pale dimorphic form.....13

9—Elytra strongly tapering from base to the rather narrowly rounded apex in both sexes, the habitus nearly as in certain species of *Donacia*, moderately stout, shining, the elytra æneo-viridate, the pubescence coarse but not dense, moderate on the elytra, longer and bristling anteriorly; head very densely punctate; antennæ thick, extending to apical third of the elytra (♂); prothorax but slightly shorter than wide, with moderate, deep and rather sparse punctures, strongly narrowed and broadly constricted at apex, the sides obtusely prominent before the middle, the smooth median line as usual; elytra one-half wider than the prothorax to less, rather more than three-fourths longer than wide, the deep punctures unusually coarse and widely separated, becoming smaller but strong and well separated apically; abdomen very feebly, sparsely punctulate and with moderate hairs. Length 8.5–9.5 mm.; width 2.9–3.4 mm. California (San Francisco).....**subænea** Lec.

Elytra parallel, generally so in both sexes so far as known.....10

10—Elytra cupreous to cupreo-violaceous in lustre, not at all greenish..11

Elytra metallic green or greenish in lustre.....12

11—Body very stout, moderately convex, shining, the pubescence only moderate in length but very coarse, bristling anteriorly; head finely, strongly, very densely punctate, with a subimpunctate and striate median line, the sides very feebly converging and nearly straight behind the scarcely prominent eyes; prothorax distinctly wider than long, relatively rather large, broadly constricted but only moderately narrowed at apex, the sides obtusely tumid before the middle, the punctures rather strong and close, becoming very dense laterally, with a smooth median line to slightly before the middle; elytra parallel, very broadly, obtusely rounded at apex, not quite twice as wide as the prothorax, only about three-fifths longer than wide, the perforate punctures not at all coarse but well separated, becoming fine though strong and still about as widely separated apically; one or two narrow impunctate lines are more or less evident except posteriorly; abdomen sparsely but rather strongly punctulate, with short darkish and unusually fine and inconspicuous hairs. Length (♀) 8.7 mm.; width 3.5 mm. California,—Levette.

corpulenta n. sp.

Body much narrower, smaller and less convex, the pubescence rather longer, coarse but sparse, bristling anteriorly; head with the punctures very fine, deep and, though very close, well defined and not confluent, the median line less punctate, broadly so anteriorly, the stria excessively fine and obsolescent; feebly converging sides very short behind the rather prominent eyes; prothorax much shorter

than wide, only very little narrowed and broadly, feebly constricted at apex, the sides only very slightly tumid before the middle; punctures fine and unevenly sparse, the smooth median line broad; elytra parallel, arcuately narrowing to the not very obtusely rounded apex in about apical third, three-fourths longer than wide, one-half wider than the prothorax, the punctures deep, everywhere equally and rather widely separated, moderately coarse basally, smaller but rather strong apically; abdomen minutely, rather sparsely punctulate and with short sparse and rather fine cinereous hairs. Length (♀) 7.2 mm.; width 2.6 mm. California (San Francisco).

francisca n. sp.

12—Form oblong, only moderately stout, convex, shining, the vestiture sparse but long, coarse and bristling; head with fine and close but distinct punctures, the median line more sparsely punctate; eyes only slightly prominent; antennæ thick, black as usual; prothorax distinctly shorter than wide, strongly, broadly constricted but only slightly narrowed at apex, slighly tumid at the sides before the middle, finely, loosely punctate, with the usual partial smooth line; elytra parallel, rounding behind only in about apical fourth, three-fourths longer than wide, fully twice as wide as the prothorax, rather coarsely, deeply punctate, more finely apically, the punctures everywhere subequally and rather widely separated; abdomen distinctly but not closely punctate. Length (♀) 8.5 mm.; width 2.9 mm. California (San Francisco),—Dunn.....**californica** Lec.

A—Slightly stouter and less elongate, with somewhat shorter vestiture, more prominent eyes, shorter and broader prothorax, with rather more sharply tumid sides before the middle and somewhat larger and closer punctures, the elytra (♀) barely two-thirds longer than wide and nearly similar in the male, likewise parallel and very obtusely rounded at tip, a little less than twice as wide as the prothorax (♀) but fully so (♂), the punctures not quite so coarse and rather less widely separated. Length (♂ ♀) 7.7–8.4 mm.; width 2.9–3.1 mm. California,—Levette.....**proxima** n. subsp.

Form similarly oblong but rather less convex and smaller in size, the vestiture coarse but notably sparse; head small, convex, with small but deep and slightly separated punctures, less punctate medially only toward the antennal line, the eyes moderately prominent; antennæ thick and short; prothorax relatively larger, fully a third wider than long, only moderately constricted and but slightly narrowed at apex, the ante-median tumors rather abrupt and strong; punctures small, sparse, irregularly distributed; elytra two-thirds longer than wide, three-fourths wider than the prothorax, parallel, gradually and arcuately narrowing in nearly apical two-fifths, the apex not very obtuse; punctures moderate, deep and perforate, separated by about twice their widths, becoming very fine and feeble apically; abdomen picescent, minutely and loosely punctulate, the fifth ventral longer than the fourth and rather narrowly rounded at tip in the type, which has the antennæ barely half as long as the body.

Length (♀) 6.8 mm.; width 2.5 mm. California (Siskiyou Co.),—Koebele..... **brevicornis** n. sp.

13—Antennæ longer, the third joint about three times as long as wide. Body larger, more shining, much less punctate anteriorly than usual, the vestiture short and sparse, moderately coarse on the elytra, longer, finer, fuscous and bristling on the prothorax; head polished and with rather small but deep punctures, separated by nearly twice their diameters, the eyes rather prominent; prothorax about as long as wide, very much narrowed and with an unusually deep constriction at apex, feebly, broadly and roundly tumid at the sides, the punctures fine, deep and sparse; elytra parallel, more than three-fourths longer than wide, not quite twice as wide as the prothorax, arcuately narrowing in not quite apical third to the transverse apex; punctures rather small but deep and perforate, everywhere well separated, becoming very fine and feeble apically; abdomen feebly and not unusually sparsely punctulate, the fifth ventral in the present assumed type short. Length (♀) 9.8 mm.; width 3.4 mm. California, (probably from the vicinity of San Francisco Bay).—Levette **subcyanea** Lec.

Antennæ shorter and relatively thicker as usual, the third and fourth joints about twice as long as wide; size smaller.....14

14—Form moderately stout (♀), or narrower and with the elytra strongly tapering (♂), strongly convex and shining; vestiture rather long, coarse and bristling, cinereous, darker, finer and more elongate-hispid on the prothorax as usual; head with rather small but strong and close-set but distinct punctures, the eyes moderately prominent; antennæ extending slightly behind the middle of the elytra (♂), a little shorter (♀); prothorax about as long as wide, moderately narrowed and constricted at apex, barely perceptibly and very broadly tumid at the sides before the middle, finely but deeply, sparsely punctate; elytra three times as long as the prothorax and one-half to two-thirds wider, arcuately narrowing in about apical third to the rather narrowly rounded apex, the punctures rather coarse, deep, well separated, smaller but still rather strong apically; color of the elytra throughout either intense blue-green, sometimes faintly violaceous, or pale red-brown; abdomen less shining, unusually densely punctulate. Length (♂♀) 5.8–8.0 mm.; width 2.25–2.9 mm. California (Trinity River in the Hoopa Valley, Humboldt Co.). Abundant..... **trinitatis** n. sp.

Form nearly similar but a little stouter and rather less convex and shining, the coarse bristling vestiture similarly cinereous on the elytra and under surface, but little darker anteriorly; head with moderate dense punctures, which are in mutual contact or very nearly, the eyes rather prominent; antennæ nearly as in the preceding; prothorax distinctly shorter than wide, moderately narrowed and deeply constricted at apex, the ante-median tumidity at the sides broad and feeble; punctures small but strong, moderately separated; scutellum densely cinereo-pubescent; elytra nearly as in *trinitatis* in both sexes though relatively a little shorter and broader, the punctures well separated but less coarse and, toward tip, becoming very fine and

feeble; color dark, with feeble suffused blue or violaceous lustre, the pale form not at hand; abdomen more sparsely punctulate, inconspicuously pubescent. Length (♂♀) 7.3–8.3 mm.; width 2.5–3.1 mm. California (Sta. Cruz Mts.),—Harford . . . . . **cærulea** n. sp.

A—Similar to the preceding, except that the antennæ are a little longer; the prothorax is as long as wide, the vestiture throughout slightly longer and bright flavescent throughout on the elytra, legs and under surface, the scutellum densely flavo-pubescent, the elytral punctures more distinct apically and the abdominal punctulation somewhat denser; the legs and tarsi are longer. Length (♂) 8.2 mm.; width 2.8 mm. Locality identical. . . **chalybea** n. subsp.

15—Head subtumid basally, shining and not densely punctate. Rather narrowly parallel, not very convex, shining anteriorly, the elytra alutaceous, almost opaque posteriorly; pubescence long, coarse but nowhere dense; head moderate, finely punctate, the punctures distinct and separated, the broad and ill-defined median line impunctate; eyes not very prominent; antennæ short, thick; prothorax a third wider than long, but little narrowed at apex though broadly and strongly constricted, the sides before the middle roundly and gradually distinctly tumid; punctures very fine and sparse, the median smooth line irregular though subentire, the long coarse hairs yellowish like those of the elytra; scutellum not densely, obscurely pubescent; elytra obscure subcupreous, parallel, fully three-fourths longer than wide and three-fourths wider than the prothorax, feebly and arcuately narrowing behind to the rather obtusely rounded apex; punctures not coarse but deep, rather close-set, becoming distinctly asperulate and feeble, with the surface subrugose, apically; abdomen very minutely and feebly, sparsely punctulate. Length (♀) 6.2 mm.; width 2.6 mm. California (Calaveras Co.) . . . . . **tumidiceps** n. sp.

Head nearly flat above, strongly, very densely punctate and dull; elytral punctures finer apically than basally but not asperulate, the surface not becoming duller in lustre 16

16—Last antennal joint (♂) unusually long, abruptly narrowed in nearly apical half and thence much narrower to the tip. Body not very stout, moderately convex and shining, the vestiture everywhere pale yellowish-cinereous, coarse, hispid and distinct, moderate in length; head moderate, the eyes rather well developed and prominent; antennæ (♂) thick, extending well behind the middle of the elytra; prothorax unusually elongate, fully as long as wide, barely wider than the head, considerably narrowed at apex and strongly constricted and margined, the ante-medial tumorosity at the sides very broad and barely evident, strongly convex, the punctures small, very deep, perforate and close-set but rather abruptly becoming very broadly sparse toward the middle, the narrow impunctate line extending almost to the constriction; scutellum closely, finely cinereo-pubescent; elytra obscure steel-blue, not quite three times as long as the prothorax and three-fourths wider, tapering from base to the rather broadly and obtusely rounded apex, the punctures deep, moderately coarse, separated by but little more than their diameters, finer apically; abdominal punctulation un-

usually dense, the fifth ventral in the male a little longer than the fourth but very broadly arcuate. Length (♂) 8.3 mm.; width 2.9 mm. California (Lake Co.),—Fuchs.....**protensicollis** n. sp.

Last antennal joint normal in both sexes, never more than faintly suggesting the structure observable in *protensicollis*.....17

17—Lateral tumorosity of the prothorax rather small and abrupt, distinct though obtuse and not strong. Body stout, rather convex and shining, black, the elytra and abdomen pale red-brown in the type, the legs piceous-black; pubescence everywhere coarse and pale yellowish, short on the elytra, long and conspicuous, though only moderately dense, on the head and prothorax; head and eyes moderate, the antennæ short and thick; prothorax distinctly shorter than wide, moderately narrowed and broadly constricted at apex, the punctures fine, close, sparser medially and with others larger sparsely intermingled, the impunctate line very gradually broadening basally; elytra scarcely two-thirds longer than wide, feebly tapering from the humeri, rather rapidly and arcuately narrowed in about apical third, the apex rather narrowly though obtusely rounded; punctures somewhat close-set and coarse though of unequal size basally, becoming finer but still very distinct apically; pale red-brown of the surface becoming nubilously and faintly blackish suturally, except basally, and also along the side margins in a broad vitta, uniting at apex with the median darker cloud; abdomen moderately punctulate. Length (♀) 9.0 mm.; width 3.3 mm. California (Gilroy Springs).....**robustula** n. sp.

Lateral swelling of the prothorax extremely broad and feeble, barely detectible.....18

18—Body moderately large, rather stout, convex, moderately shining, black, the elytra with feeble green metallic lustre, the abdomen black in the male, wholly ferruginous in the female; vestiture pale yellowish throughout, unusually long, coarse and conspicuous, rather dense on the head and prothorax, the former moderate, with but feebly prominent eyes; antennæ (♂) thick, extending barely at all behind the middle of the elytra, or (♀) similar but relatively shorter; prothorax relatively large, a little wider than long, distinctly wider than the head in both sexes, moderately narrowed and strongly, rather abruptly constricted apically, the punctures strong, slightly separated, the narrow smooth line not quite entire; elytra feebly tapering, nearly parallel in the female, obtusely rounded at apex, two-thirds to three-fourths longer than wide, one-half to two-thirds wider than the prothorax, the punctures not coarse but very deep, rather close-set throughout, smaller but distinct apically; abdomen rather densely punctulate, with conspicuous coarse pale pubescence. Length (♂♀) 9.2–10.2 mm.; width 3.2–4.0 mm. California,—Levette.....**hirsuta** n. sp.

Body much smaller and relatively much narrower than usual, the elytra strongly tapering and cuneiform, rather narrowly rounded at tip, black, the elytra moderately metallic green to sometimes partially cupreous; abdomen black, rather narrowly tapering, distinctly but not densely punctulate and with finer sparse cinereous hairs;

vestiture above cinereous, coarse, moderate in length on the elytra, more yellowish, long and silky, though not dense, and subdecumbent on the head and pronotum; head nearly as wide as the prothorax, with notably prominent eyes, the antennæ thick, nearly as in the preceding; prothorax nearly a fourth wider than long, rather strongly narrowed and deeply constricted at apex, unusually finely, rather sparsely punctured, the impunctate line in about basal half broad; scutellum densely yellowish-pubescent; elytra with rather small but deep, somewhat close-set punctures, becoming fine and closer apically. Length (♂) 6.6–7.5 mm.; width 2.2–2.8 mm. California,—Levette..... **lepidula** n. sp.

19—Form oblong-parallel, moderately convex and shining, black, the elytra somewhat piceous-black, generally faintly dark blue basally but sometimes pallescent and occasionally red-brown with a broad entire indefinite sutural vitta and another marginal and not attaining the base, the two uniting at the apex, the abdomen black to ferruginous, apparently in both sexes; pubescence coarse, yellowish, dense, darker, erect and less conspicuous anteriorly; head finely, very densely punctate, the eyes moderately prominent; antennæ moderately short and thick, a little more slender and ferruginous (♂), the third joint somewhat more than twice as long as wide; prothorax not quite as long as wide to distinctly transverse, only slightly narrowed but rather strongly constricted at apex, finely but deeply, sparsely punctate; elytra very rapidly and obtusely rounded at tip, the parallel sides broadly sinuate behind the humeri, twice as wide as the prothorax and between three and four times as long, rather coarsely and closely, very deeply punctate, more finely but distinctly behind, the surface generally with two partial and less punctate lines traceable; abdomen moderately punctulate, with unusually short and sparse pubescence; male with the fifth ventral no longer than the fourth, very broadly arcuate; female with this segment a little longer than the fourth and very evidently more narrowly rounded; body rather shorter in the former. Length (♂ ♀) 7.0–9.6 mm.; width 2.3–3.8 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell..... **versicolor** n. sp.

Form very stout, the hind body somewhat as in *bivittata*, fusco-testaceous, pallidly pubescent; prothorax shorter than wide, the sides parallel posteriorly, rounded anteriorly, the apex narrowed and constricted, densely punctate, with a median smooth space, especially posteriorly; elytra broad, convex, sparsely punctate, more finely behind, toward base irregular, having indistinct smooth lines, giving the appearance of faint longitudinal stripes, of which the inner runs obliquely forward toward the humerus, so as to tend to unite with the others; antennæ and legs dark piceous, the former rather stout, with the third and fourth joints equal. Length 9.0 mm. California... **pinguis** Lec.

There can be but little doubt, so far as now apparent, of the distinctness of most of the forms above defined, though, on the whole, there is marked monotony; some, such as *subænea*, seem to

be very constant in color; others, such as *trinitatis*, are dimorphic in that respect, while some at least, such as *versicolor*, are very confusingly inconstant, not only in coloration but in size and somewhat in outline. *Pinguis* probably belongs to the same section as *versicolor*, but differs apparently in the denser thoracic punctures, as well as the shorter and broader elytra, those of *versicolor* being scarcely at all suggestive of *bivittata*. *Atra* and *morata* constitute a rather well defined subgeneric group. *Mollipilosa*, *lugens* and *pinguis* are defined above from the original diagnoses.

Leptacmæops n. gen.

This genus differs from the preceding very much in general habitus, due to the elongate form of the body and the long filiform antennæ. We have two subgeneric groups as follows:

Prothorax always distinctly constricted at apex; size moderate, the anterior parts never, the elytra frequently, paler in color..Group I
Prothorax not constricted at apex and pale in color, the elytra always black; size much smaller.....Group II

These groups are very unequal in extent, the second comprising but a single species at present.

Group I.

Subgenus **Leptacmæops** in sp.

Under this title are to be included a large number of species and subspecies, frequently rather closely allied among themselves and sometimes exhibiting a chromatic dimorphism, similar to that noted in *trinitatis* of the preceding genus; they are definable in a fairly satisfactory manner as follows:

Elytra distinctly modified at base by an abrupt coarseness or marked sparsity of the punctures, this area in the black forms usually bright red.....2
Elytra not modified in basal sculpture.....10
2—Prothorax very short before the ante-medial lateral prominences, which are feeble and rounded as usual.....3
Prothorax notably produced at apex, the constriction less abruptly formed, with its bottom broadly rounded in concavity.....8
3—Elytra always notably more than twice as long as wide; fifth antennal joint very much longer than the first.....4
Elytra barely more than twice as long as wide; antennæ shorter though similarly slender, the fifth joint not distinctly longer than the first; size very much smaller.....9

4—Prothorax stout, very much narrowed at apex.....5
Prothorax relatively narrower, less conical, only very moderately narrowed at apex.....6

5—Tempora much retracted and converging, shining and less punctate behind the eyes, which are notably prominent; vestiture moderate, the head and pronotum finely, sparsely and very inconspicuously pubescent (♂), or moderately closely and densely but much more conspicuously (♀). Female parallel, rather wide and but slightly convex, only feebly shining, the head and prothorax with rather small, very dense punctures, the elytra strongly, rather closely punctate behind the red basal region, which is posteriorly dilated at the sides as usual, the punctures becoming finer, denser and subrugulose apically; pubescence of the head shorter than that of the pronotum, on the latter deep golden in color, short, subdecumbent and yellowish-cinereous on the elytra; antennæ slender, pale throughout, extending to apical two-fifths of the elytra, the third joint as long as the fifth, a little longer than the fourth; elytra evidently less than twice as wide as the prothorax and barely four times as long, abruptly very obtuse at apex, the latter becoming transverse toward the slightly prominent sutural angles; under surface finely, closely punctulate and with short even cinereous hairs, the meso- and metasternal parapleura abruptly clothed with longer, dense and brilliant white pubescence. Length (♀) 9.5 mm.; width 2.7 mm. California (Sta. Cruz Mts.).....**basalis** Lec.

A—Nearly similar but much smaller in size, the antennæ (♂) extending to apical third of the elytra, or (♀) slightly behind the middle of the latter, which are black, with red base in less, or entirely pale and not darker even at apex in more, than half the examples, without intermediates in color, the antennæ piceous-black, with the two basal joints pale; thoracic vestiture almost wanting (♂), or rather long, coarse and condensed medially in two longitudinal areas as in *basalis*, though darker and more fulvous in color (♀); sculpture and general form similar, the elytra parallel (♀), narrower and distinctly tapering (♂); parapleura of the hind body similarly densely clothed with longer pubescence, which is however yellowish and not pure white. Length 6.8–8.2 mm.; width 1.9–2.5 mm. California (Sta. Barbara),—Dunn. Abundant.....**dichroma** n. subsp.

Tempora slightly shining though rather strongly punctate, much less retracted and nearly parallel behind the eyes, which are less prominent; body (♂) much larger, nearly similar to *basalis* in sculpture and color throughout, the elytra black, red at base; legs as in *dichroma*, the anterior red with black tarsi, the two posterior black, with the femora testaceous in basal three-fourths and half respectively; in the female of *basalis* similar, except that the entire hind legs are black; pubescence of the head and prothorax longer, coarser, denser and more conspicuous than in any of the preceding, yellow-fulvous in color, the median line of the pronotum in a deep valley between the lines of dense heaped-up vestiture; antennæ blackish, the two basal joints pale, slender, extending but little beyond the

middle of the elytra, the latter evenly tapering from base to apex, not more than one-half wider than the prothorax and fully four times as long, the sutural angles finely and minutely dentiform; under surface densely yellowish-pubescent. Length (♂) 10.5 mm.; width 3.0 mm. California (Sta. Barbara),—Dunn... **cuneata** n. sp.

Tempora nearly as in the preceding but more retracted because of the more prominent eyes; body stout, more convex than in any of the preceding, with nearly similar sculpture, black, the elytra pale tawny-yellow to slightly piceous, always with a black marginal streak behind the humeri, the apices constantly rather broadly margined with black; pubescence more developed than in any other species, very long dense coarse and golden-yellow to fulvous anteriorly, especially in the female, short and more cinereous on the elytra, the longitudinal thoracic heaps of pubescence less widely separated than in *cuneata*, the tempora differing in being also densely yellow-pubescent like the rest of the surface; pale basal area of the elytra less distinct because of the paler color, the elytra but feebly tapering in the male; under surface densely cinereo-pubescent, less so in the male, the parapleura conspicuously albido-pubescent; legs colored nearly as in *cuneata*. Length 8.0–10.0 mm.; width 2.5–3.0 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

auricollis n. sp.

6—Tempora finely, closely punctured, not or scarcely more shining than the rest of the surface. Body slender, moderately convex, black, the elytra pale yellow, tipped with black, the legs colored as in *basalis;* head and prothorax finely, densely punctate, the former with short and moderately close, the latter with barely longer and closer and almost uniformly distributed, dark yellow pubescence, not distinctly heaped up near the feebly depressed median line; tempora arcuately converging behind the distinctly prominent eyes; antennæ slender, black, the basal joint yellow, the third not quite so long as the fifth; prothorax rather longer than wide, strongly, subcylindrically convex, with a short broad impunctate spot behind the centre; elytra less than twice as wide as the prothorax, the punctures notably strong throughout, finer apically, rather coarse basally; under surface not densely cinereo-pubescent, the parapleura with dense white decumbent hairs as usual. Length 6.8 mm.; width 1.75 mm. California (Calaveras Co.—the locality unrecorded).

elegantula n. sp.

Tempora almost completely impunctate, highly polished and conspicuous 7

7—Form slender, rather convex, shining, deep black, the elytra with four small red spots at base, the legs black, the anterior femora and tibiæ and the middle femora basally red; antennæ rufo-piceous, the two basal joints entirely testaceous; punctures of the head and prothorax small, very dense on the former, distinctly separated on the latter, of the elytra rather small, deep and close-set, becoming rapidly sparse and coarse near the base; tempora moderately retracted, only feebly converging and then rounded to the base; antennæ slender, extending to apical fifth of the elytra, the third

joint unusually long, distinctly longer than the fifth, the second one-half longer than wide; prothorax longer than wide, deeply constricted at apex, broadly rounded and feebly swollen at the sides to the basal constriction, between which and the middle the median line is broadly impunctate; pubescence very short, sparse and inconspicuous; elytra feebly tapering from the base, obtusely rounded conjointly at tip, one-half wider than the prothorax and less than four times as long, the hairs very short, rather coarse, sparse and cinereous; under surface with rather long sparse and decumbent cinereous hairs, dense and slightly yellowish on the parapleura. Length (♂) 8.5 mm.; width 2.2 mm. California (Sta. Cruz Mts.)—Harford.....**quadrinotata** n. sp.

Form still more slender, similar to the preceding, except that the posterior angle of the tempora is more acute and prominent, the antennæ deeper black, with only the basal joint testaceous though black on its inner face, very nearly as long as the body, the third joint much shorter, being distinctly shorter than the fifth, the second but little longer than wide, the prothorax narrower, rather more sharply swollen at the sides, and only near to slightly before the middle, the impunctate line attaining the base, the pubescence similarly feeble and very sparse throughout; elytra entirely black, not at all red at base and with the distal punctures finer, closer and more asperulate, the apex similarly obtusely subtruncate; dense vestiture of the parapleura of the hind body pure white. Length (♂) 7.0 mm.; width 1.8 mm. California,—Levette.....**tenuis** n. sp.

8—Rather slender and but very moderately convex, grayish-black throughout, with the elytra constantly red at base, or, wholly pale yellow-brown; legs as in *quadrinotota*, except that the hind femora are slightly rufous at base; head throughout as in that species, the tempora similarly very shining and the pubescence short and inconspicuous; antennæ piceo-rufous, the two basal joints testaceous, long and slender; prothorax elongate, tumidulously swollen at the sides before the middle, convex, finely, densely punctate, the pubescence very short, sparse and inconspicuous throughout (♂), slightly denser (♀); apical margin more arcuate than usual; elytra as in *quadrinotata*, except in basal coloration, the under surface similar; fifth ventral (♂) longer than the fourth and strongly rounded as usual, the apex narrowly and feebly sinuate and the surface apically feebly impressed. Length (♂ ♀) 6.8–9.0 mm.; width 1.85–2.2 mm. California (Lake Co.),—Fuchs.

temporalis n. sp.

9—Female rather slender, moderately convex, shining, black, the elytra wholly pale brownish-yellow in the type; head very densely punctate and feebly pubescent, the retracted tempora rapidly converging behind the eyes, shining and sparsely punctate but only on the flanks, not shining from above, the antennæ attaining the middle of the elytra, colored as in *tenuis;* prothorax barely at all longer than wide, narrow, the sides broadly and feebly rounded between the constrictions, the punctures relatively coarser than usual and slightly separated, the pubescence short, sparse and wholly incon-

spicuous; scutellum narrow, pointed, black; elytra rather strongly punctate, almost impunctate at base, the punctures very fine, feeble and rather sparse apically; legs black, variegated with testaceous as in *basalis;* fifth ventral (♀) not longer than the fourth and very broadly arcuate at apex. Length (♀) 5.2 mm.; width 1.5 mm. California,—Levette..... **minima** n. sp.

10—Form more convex, the integuments thick, intense black throughout, strongly sculptured and almost glabrous; apical constriction of the prothorax feeble.....11

Form more elongate and less convex, with thinner integument.....12

11—Body moderately stout, convex, densely black throughout, the anterior legs, excepting the tarsi, and the other legs black, the femora rufescent at base; head well developed, parallel, rather transverse, very densely punctate and opaque throughout, the tempora barely at all less prominent than the eyes, straight and parallel for some distance behind them, then rounded to the broad neck; antennæ inserted as usual in the genus, slender, rufo-piceous throughout, as long as the body in the male, the fourth joint slightly shorter than the third, the fifth distinctly longer; eyes rather small, minutely faceted and entire, only moderately prominent; prothorax barely at all wider than the head, slightly transverse, distinctly narrower at apex than at base, prominently rounded at the sides medially, biconstricted, strongly and densely punctate, with a narrow smooth polished and unimpressed median line almost to the apex, the pubescence very inconspicuous, minute; elytra rather more than twice as long as wide, one-half wider than the prothorax, evenly tapering from base to the conjointly evenly rounded apex, the sutural angles rounded; punctures coarse, deep, slightly less coarse apically, separated by two to three times their diameters, the hairs minute and scarcely visible; legs slender. Length (♂) 9.0 mm.; width 2.8 mm. California (Sta. Cruz Co.). A female from Nevada is stouter, with relatively smaller anterior parts and broader and perfectly parallel, more coarsely sculptured elytra, less prominent tempora, smaller and more angulate lateral prominences of the prothorax and shorter antennæ; it may be conspecific. [*Leptura cubitalis* Lec.]..... **cubitalis** Lec.

Body less stout, similarly colored throughout and with generally similar sculpture, but with much longer and more evident pubescence and less elongate male antennæ, these being more testaceous, not quite as long as the body and with much less elongate joints; head differing in having the tempora very much less prominent than the relatively larger and more convex eyes, converging and prominently rounding to the narrower neck; prothorax nearly similar in form and sculpture but less coarsely punctate and with the coarse recumbent pale hairs much more conspicuous; elytra narrower, less than one-half wider than the prothorax, two and one-half times as long as wide, still more coarsely and less sparsely punctate, the hairs, though very short, decidedly more distinct than in *cubitalis.* Length (♂) 7.0–8.2 mm.; width 1.9–2.4 mm. California (San Diego). [*Acmæops variipes* Csy.]..... **variipes** Csy.

12—Prothorax never longer, and generally distinctly shorter than wide; elytra usually uniform in color, deep black as a rule.....13

Prothorax always somewhat longer than wide; elytra vittate.....20

13—Basal angles of the prothorax small and, though acute, never prolonged beyond the longitudinal line limiting the median arcuation of the sides.....14

Basal angles very acute and laterally prolonged beyond the line of the median arcuation, the prothorax more narrowed from base to apex, or more campanulate.....15

14—Color black throughout the body, legs and antennæ, except the humeral angles of the elytra, which are red; pubescence ashy, rather long and moderately close, partially erect, shorter, coarser and sparser on the elytra, though conspicuous; head and prothorax very densely punctate and dull, the former subquadrate, the tempora but little less prominent than the eyes, parallel for a short distance, then strongly rounding; antennæ slender, nearly as long as the body in the male; prothorax barely wider than long, not conspicuously narrowed at apex, rounded at the sides medially, the constrictions evident but not deep; smooth median line virtually obliterated, finely striiform submedially; elytra two-fifths wider than the prothorax, rapidly tapering, rather more than twice as long as wide, rounding at apex, with obtuse sutural angles, the punctures rather coarse, unusually close, becoming dense suturad, the sutural bead not more densely pubescent; abdomen finely, rather closely punctate and loosely clothed with long hairs, the fifth segment (♂) narrowly sinuato-truncate at apex and with the surface impressed medially toward tip. Length (♂) 8.5 mm.; width 2.8 mm. Oregon. [*Acmæops militaris* Lec.].....**militaris** Lec.

Color deep black throughout, with the anterior tibiæ and tarsi alone paler and obscure testaceous, the entire elytra, legs and antennæ throughout occasionally pale ochreo-testaceous, at least in the male, the abdomen always black, sometimes pale at the extreme tip; head and prothorax densely punctate but less so and less dull than in the preceding species, the elytral punctures much coarser and more widely separated, becoming more rapidly and decidedly smaller from base to apex; head in both sexes with more prominent eyes and more obliquely rounding, much less prominent tempora than in *militaris;* prothorax more decidedly transverse and with relatively more narrowed apex and deeper constrictions; elytra nearly similar in form, rapidly tapering throughout in the male, or just visibly in the female; elytral suture not more densely pubescent; pubescence long, abundant, erect and bristling on the head and prothorax, sparser, less elongate and more reclining on the elytra, becoming bristling and erect only toward base. Length (♂♀) 9.0–10.0 mm.; width 2.8–3.1 mm. Washington State to Montana (Helena—W. M. Mann) and Wyoming (Yellowstone Park). [*Acmæops subpilosa* Lec.].

subpilosa Lec.

15—Sutural bead of the elytra conspicuously and densely albido-pubescent, the hairs elsewhere very small, fine and inconspicuous, longer at apex and the side margins. Body only moderately slender,

the elytra very moderately cuneiform, black throughout, the tarsi sometimes piceous, the anterior tibiæ and tarsi and the antennæ testaceous, the basal joint of the latter infuscate; head and prothorax strongly and densely punctate, only slightly shining and bristling with pale fulvous erect or suberect hairs, the former with prominent eyes and much less prominent tempora, which are parallel (♂) to oblique (♀); antennæ long and slender, four-fifths as long as the body in the male, not differing much sexually; prothorax distinctly transverse, the apex much narrowed and with deep constriction, the narrow smooth median line obliterated before the middle; basal angles but very moderately prolonged transversely; elytra nearly as in the preceding but with the rather coarse punctures very widely spaced, being separated by three to five times their own diameters, becoming but slightly smaller apically but notably smaller and closer on the basal swelling near the scutellum; surface strongly shining; abdomen rather finely, closely punctate and with moderate hairs; legs rather long, slender. Length (♂♀) 10.5–11.0 mm.; width 3.5 mm. Washington State..... **nitidipennis** n. sp.

Sutural bead not clothed differently from the general surface, the pubescence of which is rather short, reclined, coarse, pale and distinct. 16

16—Tempora but very little less prominent than the eyes, which are not very convex or prominent. Body deep black throughout, the legs picescent distally, the anterior tibiæ and tarsi testaceous; antennæ rufo-piceous, with the basal joint black anteriorly, pale posteriorly, slender, two-thirds as long as the body in the female; head and prothorax extremely densely but not very finely punctate and slightly shining, the former subquadrate, the tempora feebly oblique behind the eyes (♀); prothorax but slightly transverse, strongly narrowed at apex and distinctly bi-impressed, the sides arcuate between the constrictions; surface somewhat swollen at each side of the median line, which is smooth in the type only in a small dash just behind the middle; pubescence denuded in the type; elytra much wider than the prothorax, moderately cuneiform, more than twice as long as wide, the punctures moderately coarse, close-set, the surface transversely subrugose by anteriorly oblique light; abdomen minutely, feebly, rather closely punctulate, shining. Length (♀) 9.5 mm.; width 2.9 mm. Unlabeled in Levette collection . . **intermedia** n. sp.

Tempora in both sexes much less prominent than the eyes, which are more prominent and strongly convex; body and legs colored as in *intermedia*..... 17

17—Tempora oblique and nearly straight behind the eyes, apparently in both sexes..... 18

Tempora parallel and straight for a rather long distance behind the eyes, at least in the male..... 19

18—Body nearly as in the preceding but larger and with longer pubescence; head relatively smaller, densely punctate, the tempora converging and very short behind the eyes, then very broadly arcuate, then sinuate to the neck, which is much narrower; antennæ (♀) nearly similar; prothorax still more transverse and strongly campanulate, much wider than the head, the basal angles unusually prolonged

laterally and the apex relatively narrower; pubescence conspicuously condensed along each side of the middle, coarse and yellowish, the erect hairs numerous; punctures dense, the constrictions very distinct; elytra less cuneiform, broader, with moderate and unusually closely placed punctures, the surface not rugulose transversely; pubescence denser than usual, coarse, reclined, yellowish-cinereous, longer, more erect and bristling toward base; abdomen finely punctulate, with distinct inclined ashy pubescence; legs very slender; basal joint of the hind tarsi two-fifths of the whole. Length (♀) 11.0 mm.; width 3.5 mm. Unlabeled in Levette collection—probably Oregon. [*Acmæops lupina* Lec.].....**lupina** Lec.

Body nearly as in *intermedia* but smaller and with sparser and coarser sculpture; pubescence yellowish-cinereous, erect and bristling on the anterior parts but evenly distributed and not dense, unusually short, depressed, coarse and rather sparse though distinct on the elytra; head scarcely narrower than the prothorax in either sex, densely and rather coarsely but shallowly punctate, the tempora converging and somewhat arcuate for a longer distance behind the eyes, then much more abruptly narrowed to the neck, which is nearly as in *lupina* and narrower than in *intermedia;* prothorax throughout nearly as in the latter species; elytra smaller, being narrower and shorter, similar otherwise, except that the punctures are much coarser, deep and separated by rather more than their own diameters; abdomen black throughout, finely, rather sparsely punctulate. Length (♂♀) 8.8–9.0 mm.; width 2.7 mm. Washington State.
pugetana n. sp.

19—Moderately slender, convex, grayish-black, the abdomen more or less rufescent posteriorly, the legs as usual in this group; pubescence decidedly yellow, less so and shorter, decumbent and not dense on the elytra, unusually long, coarse, reclined, close and conspicuous on the head and prothorax, which are very densely punctate and dull, the former not differing much sexually, subquadrate, with unusually convex eyes, which are much more prominent than the parallel tempora, the latter broadly rounding posteriorly to the neck; antennæ (♂) three-fourths as long as the body, slender, piceous-black; prothorax wider than long, much more so in the female, moderately narrowed and well constricted at apex, the acute basal angles only moderately produced laterally; elytra as in the preceding species, cuneiform and slightly more elongate (♂), subparallel (♀), strongly and closely punctate, the punctures less coarse and denser posteriorly; abdomen minutely, sparsely punctulate and shining as usual in the preceding species, the fifth segment (♂) broadly and feebly concave from the apex beyond the middle. Length (♂♀) 9.5–10.0 mm.; width 2.8–3.0 mm. Utah.....**quadriceps** n. sp.

20—Abdomen dull, very densely and finely punctate and closely pubescent. Body (♀) rather larger than usual, black, the legs as in the preceding species of this subgenus, the elytra pale testaceous, a sutural, marginal and very faint discal vitta infuscate; pubescence short, sparse and inconspicuous, minute on the elytra; head densely punctate and dull, the eyes moderate or rather small, the

tempora feebly oblique and arcuate behind them and barely less prominent; antennæ (♀) slender, dusky-testaceous, three-fourths as long as the body; prothorax much larger than the head, barely at all longer than wide, much narrowed and strongly, obtusely constricted at apex, the sides notably and subangularly prominent just before the middle; surface strongly, densely punctate, less closely medially, distinctly swollen at each side of the middle, especially before the basal constriction; elytra large, two and one-half times as long as the head and prothorax, four-fifths wider than the latter, feebly cuneiform, the apices subtruncate but without external angulation, the punctures deeply impressed, widely separated, very coarse basally, becoming remarkably fine apically. Male much smaller and more slender than the female, the thoracic and abdominal punctures smaller and not so dense. Length (♀ ♂) 10.3–11.7 mm. width 2.75–3.8. mm. Colorado—Levette and New Mexico (Sandia Mts.),—Wirt Robinson ..... **punctiventris** n. sp.

Abdomen shining, finely, feebly and not densely punctulate, not densely pubescent 21

21—Head quadrate, the straight parallel tempora scarcely at all less prominent than the eyes, rounding rather abruptly at base to the neck, very densely punctate. Body more slender, black, the anterior versicolored legs as usual, the elytra dusky, with a pale discal vitta on each, becoming obsolete posteriorly, and another, narrower, feebler and more apical and external; vestiture throughout very short, sparse and inconspicuous; head fully as wide as the prothorax, slightly transverse, the antennæ (♂) slender, four-fifths as long as the body, testaceous, with the basal joint dusky; prothorax slightly elongate, the rounded apex moderately narrowed and broadly constricted, the sides rather prominent but obtuse medially; surface nearly as in the preceding, shining but with the strong punctures close throughout, excepting the smooth narrow median line; elytra cuneiform, three-fifths wider than the prothorax, not quite twice as long as the head and prothorax, the punctures nearly similar but less coarse and more perforate; abdomen deep black throughout, the fifth segment (♂) with a small apical concavity. Length (♂) 10.5 mm.; width 3.0 mm. Colorado. [*Leptura longicornis* Kirby]. **longicornis** Kirby

Head much smaller, the tempora obliquely and broadly arcuate from the eyes to the neck, the eyes relatively more prominent though moderate in size 22

22—Body slender (♂), or rather stout, with parallel elytra (♀), colored and clothed as in *longicornis*, the pale vittæ of the elytra variable in extent and similarly nubilous; head nearly similar in the sexes, though relatively smaller in the female, densely punctate; antennæ very slender, almost as long as the body (♂), distinctly shorter (♀); prothorax nearly as in the preceding but smaller and barely as long as wide, the swelling of the surface at each side of the middle obsolescent, the punctures throughout rather well separated, denser in the female; elytra cuneiform (♂) or parallel (♀), the punctures nearly as in *punctiventris* but relatively less minute apically; fifth

ventral (♂) not impressed apically. Length (♂ ♀) 9.5–10.3 mm.; width 2.4–3.1 mm. Colorado. Levette collection. [*Acmæops ligata* Lec.]. . . . . **ligata** Lec.

Body nearly as in the preceding in outline but smaller and with less abbreviated and much more evident pubescence above, and especially on the abdomen, where it is closer though not dense as it is in *punctiventris;* head and prothorax in form and sculpture nearly as in *ligata*, the tempora still more oblique and the eyes somewhat more prominent; antennæ (♀) pale in color throughout, slightly shorter than in the preceding; elytra very pale flavo-testaceous, a rather abrupt narrow common sutural vitta black, the apices similarly narrowly truncate, with broadly rounded external and sharply defined sutural angles, the punctures similar, though relatively finer apically; legs very pale testaceous throughout in the type, the under surface wholly deep black. Length (♀) 8.4 mm.; width 2.75 mm. Colorado (Veta Pass),—Schwarz. . . . . **alticola** n. sp.

The species described by LeConte under the name *Acmæops vincta*, I have not seen; it is entirely similar to *ligata*, according to the descriptions, but with denser thoracic sculpture. *Dorsalis* Lec., is also unknown to me; it is united with *subpilosa* by LeConte (Sm. Misc. Coll., 264, p. 209) but I suspect erroneously, as the author also united *lupina* with *subpilosa* at the same time, these species being amply different and not at all synonymous. *Marginalis* Lec., may be a true synonym of *longicornis*, as stated (l. c.), since the extent of the pale vittation of the elytra is variable to some extent, as noted above under *ligata*. *Leptura spuria* Lec., also belongs to this subgenus of *Leptacmæops*, but I have no example before me at present; it seems closely allied to *subpilosa*, but is not the same as *militaris* as stated by G. H. Horn. In *punctiventris* there is frequently only the black sutural vitta, extending from base virtually to the apex, where it is much narrowed.

The locality Sta. Cruz Co., given under the original description of *variipes* (Ann. N. Y. Acad., VI, p. 38) was taken from a specimen of the series bearing this definite label; others had simply "Cal" as a label, one of which, the type, I find had a minute label concealed by the other and bearing the initials "S. D." *Variipes* may be a simple variety of *cubitalis*, but closer observation seems to show that it is probably a distinct, though very closely allied species.

Group II.

Subgenus **Acmæopsilla** nov.

A single very small and slender species of peculiar and extremely constant coloration, alone constitutes this subgenus of *Leptacmæops* as follows:

Body narrow and convex, alutaceous in lustre, black, the head before the antennæ, the prothorax and occasionally the tip of the abdomen red; legs black throughout; pubescence anteriorly extremely minute, sparse and scarcely visible, longer, pale and more distinct on the elytra and abdomen, close on the latter; head very densely punctate, with well developed and very convex eyes, the tempora much less prominent, parallel, then rounding to the base, polished and punctureless as in the *basalis* group; antennæ slender, piceous-black, fully as long as the body; prothorax slightly elongate, narrower than the head, much narrower at apex than at base, broadly rounded at the sides, without trace of apical constriction, the basal broadly impressed and distinct; punctures very fine, sparse, the surface evenly and strongly convex throughout; elytra one-half wider than the prothorax and more than three times as long, feebly cuneiform, rounded at apex, the punctures close-set, rather strong basally, fine apically; legs very slender. Length (♂♀) 5.7–6.5 mm.; width 1.7–1.8 mm. California (San Diego). [*Acmæops falsa* Lec.] **falsa** Lec.

Sexual differences seem to be very slight, the elytra of the male being somewhat more cuneate and narrowly, individually rounded at apex; in the female they are obliquely subtruncate.

Acmæops Lec.

The type of this genus as intended by LeConte (Agassiz L. Sup. 235), is either *Pachyta discoidea* Hald., or *Leptura proteus* Kirby, those species of his Division A being rather *Gaurotes* than *Acmæops*, as before stated and typified by *Pacyhta thoracica* Hald. *Acmæops*, as here limited, includes small species with moderately elongate, slender antennæ and very diversified prothorax, this part in *directa* being almost a counterpart of that characterizing *falsa* of the preceding genus, but in all cases the more extended genæ and epistoma produce a narrowed and elongate form of the head before the eyes, which is quite different from anything known in *Leptacmæops* and remindful of *Ophistomis*, especially in the extreme form developed in the holsubarctic *pratensis*. The various groups and specific forms can be noted in the following table:

Prothorax evenly and strongly convex, the apex with an elevated and acute marginal bead, behind which there is only an extremely short and feeble constriction; neck unusually narrowed and elongate; elytra conjointly rounded at tip.....2

Prothorax almost evenly convex but with the apex broadly and deeply constricted; neck shorter and not so narrowed; elytra narrowly truncate at tip.....3

Prothorax tumid laterally on the disk just before the broad basal constriction, the apical constriction distinct, the subbasal tumidities sometimes feeble, but in *discoidea* becoming almost spiniform; neck as in the preceding group; elytra narrowly truncate to sinuate at tip.....4

2—Body moderately stout, shining, pale rufo-testaceous throughout, the apical part of the antennal joints and three vittæ, sharply defined on each elytron, sutural, marginal and discal, the marginal inwardly dilated near the middle, black; pubescence short, sparse, pale and inconspicuous; head and prothorax very finely, sparsely punctate, the eyes well developed, convex and prominent, the sides behind them strongly oblique and nearly straight to the narrowed neck; antennæ very slender, as long as the body; prothorax very slightly elongate, evidently wider than the head, evenly and almost globularly convex, the apex transversely truncate, two-thirds as wide as the base, the sides subprominently rounded just before the middle, the basal angles sharp but not projecting beyond the line of the median prominences; elytra a little less than twice as wide as the prothorax and between three and four times as long, subparallel in both sexes, the punctures very coarse, deep, less coarse toward apex, separated by less than their own diameters; abdomen very minutely, feebly and sparsely punctulate, shining and with very short, sparse and inconspicuous hairs; legs very slender. Length (♂ ♀) 6.5–7.5 mm.; width 1.8–2.2 mm. Pennsylvania and Indiana.....**directa** Newm.

3—Form stout; surface shining, black throughout, the legs and antennæ black, the elytra pale tawny-flavate, with a nubilous black streak from the humeri obsolescent behind the middle, the apices and suture black, the black areas sometimes wholly wanting and the elytra occasionally wholly piceous; pubescence short, moderately abundant, pale and distinct; head nearly as in the preceding, being small and rapidly oblique at the sides behind the prominent eyes, but closely and strongly punctate; antennæ much less slender and shorter, three-fourths (♂) to three-fifths (♀) as long as the body; prothorax large, very much wider than the head, strongly narrowed at the arcuate and conspicuously constricted apex and deeply, moderately closely punctate, shining; elytra shorter than in any other species, scarcely twice as long as wide, one-half wider than the prothorax, feebly cuneiform, the punctures moderate in size, rather close-set; abdomen shining, finely, sparsely punctulate; legs very slender. Length (♂ ♀) 5.2–8.0 mm.; width 2.0–2.8 mm. Colorado, Montana, California, Hudson Bay Territory and Siberia.....**pratensis** Laich.

4—Elytra uniform in color, black or pale, subvittate or nubilously maculate 5

Elytra uniformly black, margined abruptly at base, apex, externally and more narrowly along the suture, with brick-red, the coloration notably constant 12

5—Prothorax less developed and more convex, the subbasal prominences moderate, less widely separated and merely convex 6

Prothorax relatively larger, the prominences more acutely elevated, more widely separated and with the intervening concavity always more densely punctate and pubescent, these thoracic characters, as in the preceding group, asexual in development 11

6—Head subquadrate, the tempora much less prominent than the eyes but parallel and straight behind them for a considerable distance, then rather abruptly rounding to the broad neck. Body deep black, the legs testaceous, black at the apices of all the femora and tibiæ, the tarsi, entire abdomen and antennæ basally deep black; elytra testaceous, with a broad common sutural stripe, vanishing before the apex, and a feeble nubilous submarginal streak, not attaining base or apex, black or infuscate; pubescence very short, coarse, pale and sparse; head finely, loosely punctate, broadly impressed at each side of the front; antennæ (♀) slender, piceous distally, barely more than half as long as the body; prothorax as long as wide, narrowed and strongly constricted at apex, slightly wider than the head, the sides broadly arcuate; surface finely but deeply, sparsely punctate, with an impunctate median line, alutaceous in lustre like the head; elytra one-half wider than the prothorax and nearly four times as long, just visibly cuneiform, rounding apically, the sharply defined truncatures sinuate; abdomen rather closely but very finely punctulate; legs slender. Length (♀) 8.8 mm.; width 2.8 mm. Colorado (Boulder Co.),—F. Y. Parker. . . . . **parkeri** n. sp.

Head suboval, with similarly very prominent eyes, behind which the much less prominent tempora rapidly and somewhat arcuately converge to the relatively narrower neck 7

7—Thoracic prominences somewhat more widely separated, the elytral punctures remarkably fine, sparse; sinus at the apex of the fifth male ventral less abrupt and rather shallow. Body black, shining, the tibiæ and tarsal joints testaceous, blackish at the tips, the femora black, rufous at base; head finely but deeply, somewhat sparsely punctate, the antennæ (♂) three-fourths as long as the body, pale piceo-testaceous, black basally; prothorax barely as wide as the head, moderately narrowed and constricted at apex, the punctures rather small but perforate, sparse, irregular in distribution; elytra but little more than twice as long as wide, three-fourths wider than the prothorax, very moderately cuneiform, the truncatures transverse; color piceous-black, nubilously testaceous discally toward base, at apex and along the marginal bead; punctures becoming larger internally toward base as usual. Length (♂) 7.4 mm.; width 2.4 mm. Lake Superior. . . . . **lacustrina** n. sp.

Thoracic prominences a little less widely separated; elytral punctures

stronger, except in *obsoleta*, the apical abdominal sinus of the male more abruptly formed and distinctly deeper.....8

8—Elytral punctures moderate, becoming fine, feeble, asperulate and unusually close-set toward apex. Body and elytra black throughout; legs pale testaceous, the tarsi piceous distally, the femora black at tip; head unusually small, very finely, sparsely punctate throughout; antennæ missing in the type; prothorax moderate, scarcely as long as wide, a little wider than the head, strongly narrowed and abruptly deeply constricted at apex, the prominences almost completely obsolete, the surface between them not at all concave, finely, sparsely punctate, with the usual impunctate line; elytra subparallel, one-half wider than the prothorax and four times as long, rounding apically, the truncatures transverse; abdomen very finely, rather closely punctulate. Length (♀) 7.8 mm.; width 2.6 mm. Colorado. Levette collection.....**obsoleta** n. sp.

Elytral punctures less close-set and not or very feebly asperate toward tip.....9

9—Punctures of the head coarse, deep and very close-set except medially. Body rather stout, shining and deep black throughout, the legs, elytra and antennæ wholly black; pubescence sparse, fulvescent, less abbreviated than usual and, on the prothorax, rather long and very obvious; head in outline as in the two preceding, the antennæ (♂) slender, nearly four-fifths as long as the body; prothorax fully as long as wide, much narrowed and deeply constricted at apex, very finely and sparsely punctate, the prominences feeble, the surface not concave between them; elytra barely one-half wider than the prothorax and between three and four times as long, moderately cuneiform, the apical truncatures straight, slightly oblique; punctures moderate in size, deep, subperforate, not at all asperate posteriorly and everywhere unusually close-set, becoming dense and separated by their own diameters, to but little more, on the flanks; abdomen finely, loosely punctulate. Length (♂) 7.5 mm.; width 2.5 mm. Colorado. Levette collection.....**puncticeps** n. sp.

Punctures of the head fine and more or less sparse throughout; thoracic prominences less feeble, the intervening surface just visibly concave.....10

10—Head and prothorax of equal width, the latter narrower than usual and longer than wide; color black throughout the body, legs and antennæ, the elytra piceous-black, testaceous at base, the pale area descending discally and marginally, the vittæ gradually narrowing and becoming obsolete near the middle, the apices also pale; head finely punctate, the punctures well separated but not very sparse; antennæ (♂) four-fifths as long as the body; prothorax much narrowed and strongly constricted at apex, the punctures fine, very sparse, less sparse basally; surface alutaceous, the hairs rather short and fine, inconspicuous; elytra highly polished, formed as in *lacustrina* but with unusually coarse and impressed punctures, fine but not asperate distally and everywhere sparse; abdomen finely, sparsely punctulate. Length (♂) 7.0 mm.; width 2.4 mm. Colo-

rado (Boulder Co.). Collected at Magnolia by Mrs. T. L. Casey.
aurora n. sp.

Head narrower than the prothorax in both sexes; body deep black throughout, the legs (♂) deep black, all the femora abruptly bright red in basal third to half, or (♀) dusky testaceous, the tibiæ and tarsal joints black at apex, the femora black apically; pubescence very short, pale and coarse, sparse throughout; head finely, sparsely punctate throughout, the occiput sloping upon the neck as usual, the antennæ (♂) slender, wholly black and nearly four-fifths as long as the body, or (♀) scarcely more than half as long as the body, dusky-testaceous, black at base; prothorax in general outline nearly as in the preceding, as long as wide, minutely, sparsely punctate, not more closely basally (♂), or rather less sparsely and more coarsely (♀); elytra nearly similarly and moderately cuneiform in both sexes, narrower in the male, the apical truncatures straight to feebly sinuate; punctures notably fine, barely more than half as distant as in the preceding and much finer throughout, though, as usual, becoming larger basally and especially toward the suture; legs and abdomen as usual; basal joint of the hind tarsi not quite as long as the remainder. Length (♂♀) 7.5–9.5 mm.; width 2.3–3.2 mm. Colorado (Boulder Co.—Magnolia, and Fraser,—C. A. Frost).
coloradensis n. sp.

1—Body sexually almost similar and moderately stout, a little less stout in the male, the elytra almost similarly and moderately tapering in both sexes, black, the elytra (♂) black, with the marginal bead rufous and with the legs rufo-piceous, the femora black, rufous basally, nearly similar in the female, the latter, however, with the elytra blackish-subæneous, with a discal testaceous vitta, which is very broadly interrupted medially, the lateral bead, broadening apically and basally, also testaceous; pubescence very short throughout, coarser and paler on the elytra as usual; head small, rather finely but deeply and closely punctate throughout, the tempora obliquely arcuate to the neck, much less prominent than the very convex eyes; antennæ peculiar, slender as usual but unusually short in both sexes and apparently a little longer in the female, one-half to three-fifths as long as the body, piceous-black basally; prothorax much wider than the head, as long as wide, much narrowed and constricted at apex, not very finely punctate, the punctures close-set and with the usual smooth line (♂), or finer and sparser (♀); smooth median line striate along the middle; prominences widely separated and subacutely prominent; elytra truncate at tip, finely, not at all closely punctate, the punctures a little larger basally; last ventral slightly truncate at apex in the male, rounded in the female. Length (♂♀) 8.0–8.5 mm.; width 2.8–3.0 mm. Maine (Paris and Monmouth),—C. A. Frost.....**cavicollis** n. sp.

Body nearly as in the preceding but larger and stouter and with the female elytra not cuneiform but parallel; color black, the elytra pale testaceous, with a narrow nubilous black sutural vitta and a feeble longitudinal cloud at the summit of the flanks near the base, the legs long, slender, testaceous, the tarsi piceous, the femora black

apically; pubescence short but closer and more conspicuous than in the preceding; head nearly similar but less closely punctate, the antennæ nearly three-fifths as long as the body, slender, testaceous, the basal joints black on their anterior sides; prothorax nearly as in *cavicollis* but with the punctures (♀) much larger, perforate and decidedly dense, the pubescence paler, closer and more conspicuous; elytra differing decidedly in being parallel and more strongly, as well as much more closely, punctate, as well as being almost similarly sculptured throughout, the punctures scarcely at all larger or sparser basally; legs notably longer, similarly very slender. Length (♀) 9.0 mm.; width 3.2 mm. Wisconsin (Bayfield),—Wickham.

proteus Kirby

12—Form stout, oblong-elongate, parallel, the elytra but feebly cuneiform even in the slightly narrower male; integuments not shining as in all the preceding, but opaque black, the elytra as stated, the legs black, the antennæ black, gradually piceous apically, three-fourths (♂) to but little more than one-half (♀) as long as the body; pubescence evenly distributed, very minute but pale and evident; head finely, not densely punctate, the tempora much less prominent than the very convex eyes, short, rapidly arcuate and oblique to the neck; prothorax barely (♂) to distinctly (♀) wider than the head, wider than long, much narrowed and constricted at apex, strongly and closely punctate, the median smooth line almost obliterated, the prominences even more acute and widely separated than in the two preceding; elytra nearly one-half wider than the prothorax, more than twice as long as wide, with the usual narrow apical truncatures; punctures widely separated and minute, almost uniform; abdomen very finely, densely punctulate; legs unusually densely clothed with short stiff gray hairs. Length (♂ ♀) 7.0–8.3 mm.; width 2.2–2.9 mm. New Jersey.....**discoidea** Hald.

A species was described from Washington Territory, by LeConte (Proc. Acad. Phila., 1861, p. 356), under the name *gibbula*, which, though allied to *aurora* and *coloradensis*, is probably different, the elytral punctures being coarser than in the latter and the head and prothorax more densely punctate than in the former; it is said to be fusco-pubescent, which language would not apply to either of those species; the length is stated to be 8.75 mm.; it is not closely allied to *proteus* as now stated in the lists. No other very useful comparative remarks can be founded upon the very short description, but the locality is somewhat different.

The species described by Schaeffer under the name *Acmæops pinicola* (Bull. Br. Inst., I, p. 341) also belongs to this group. It is probably allied closely to *puncticeps* but differs in its shorter antennæ, these being only half as long as the body in examples which, from the described coloration of the body and legs, are prob-

ably males, and in its more impressed prothorax; the length of *pinicola* is given as 8.5 mm., and it is from the Huachuca Mts. of southern Arizona.

It has occurred to me that *puncticeps* might possibly be the male of *obsoleta*, but in this case the sexual differences in sculpture would be very remarkable, especially on the elytra, where sexual peculiarities of this kind are not observable elsewhere.

In considering the subdivisions of the Lepturini following *Acmæops*, attention is invited to the general catalogue by Aurivillius, in the Schenkling series and recently published, where some definite and determinative order has been attempted. I think, however, that the compiler has still admitted too few separate genera and has unnecessarily reduced certain American types, which seem to be distinct genera, to the status of subgenera, as, for example, the nearctic so-called *Strangalia* (*Ophistomis* Thoms.), *Typocerus* Lec., and *Bellamira* Lec., which are considered subgenera of *Strangalia* in the broad sense, the latter genus in its typical form being represented in his opinion by such diverse species as *obliterata*, *gigas* and *nana*, which have been in our lists under the confusing complex known as *Leptura* Linn. To come at once to the point, the author of the catalogue has not gone far enough; for, admitting *obliterata* Hald., and allies as typical *Strangalia*, the species allied to *gigas* and *nana* cannot properly be included, for they are of an entirely different habitus. Not enough stress has been laid by European authors upon the presence or absence of the remarkable sensitive pits or areolæ on the outer antennal joints, sometimes enormously developed in *Ophistomis*. I think that the possession of these areas by *Typocerus*, renders it generically distinct from *Strangalia obliterata*, even without considering the different tarsal structure. Species such as *Lept. canadensis* and *aurocoma* are considered by Aurivillius to be true *Leptura*, while *læta*, *impura* and *matthewsi* are placed in the genus *Judolia* Muls.; this distinction I cannot follow very clearly. It seems, after all, that general facies or habitus may be of more value in delimiting genera allied closely to *Leptura*, than any single structural character. Our genera may be outlined as follows:

Antennæ without conspicuous sensitive areas on the distal joints.....2
Antennæ with sensitive areas, generally well impressed on the distal joints.....13

2—Prothorax not biconstricted, generally without apical constriction of any kind, except the delimitation of a more or less pronounced apical bead 3

Prothorax constricted only at apex; front very much produced as in *Ophistomis* 7

Prothorax biconstricted; front variable, though generally briefly produced 8

3—Body short and stout, the elytra relatively short, more or less cuneiform; front broadly produced as usual, sometimes more narrowly and very notably so, as in *Judolia quadrillum* Lec. 4

Body elongate and more or less slender, stouter in *Strangalia* 5

4—Elytra pale, with black spots in transverse lines to entirely black, almost immaculate in *impura;* prothorax subangulate at the sides before the middle; third joint of the hind tarsi rather cylindric but short, deeply emarginate. [Type *Lept. sexmaculata* Linn.]. Atlantic to Pacific regions. ..... **Judolia**

Elytra black or pale, never transversely banded; prothorax generally not at all angulate at the sides; third hind tarsal joint as in *Judolia*. [Type *Lept. vagans* Oliv.]. Atlantic to Pacific regions. **Brachyleptura**

5—Front extremely short before the antennæ and not produced; body small, black or blue, with black or red prothorax; legs very slender, the third joint of the hind tarsi short and bilobed; elytra always parallel, sometimes even inflated posteriorly as in the female of *molybdica* Lec., the apices very obtuse. [Type *Lept. molybdica* Lec.]. Atlantic to Pacific regions. ..... **Parallelina**

Front normal, briefly and broadly produced before the antennæ 6

6—Body small, subparallel, the elytra generally moderately cuneiform; basal angles of the prothorax laterally very prominent; legs and antennæ very slender, the third hind tarsal joint bilobed. [Type *Lept. americana* Hald.]. Atlantic regions. ..... **Charisalia**

Body small to barely of medium size, slender, the elytra cuneiform, vittate when ornamented; tempora unusually developed; third hind tarsal joint short, deeply bilobed. [Type *Lept. vittata* Oliv.]. Atlantic to Pacific regions ..... **Strangalepta**

Body larger and stouter, the elytra strongly cuneiform and much narrowed to the tips; third hind tarsal joint elongate, cylindric, emarginate at tip; legs relatively long, slender. [Type assumed *Lept. obliterata* Hald.]. Atlantic to Pacific. ..... **Strangalia**

7—Prothorax very convex, not constricted at base, with obtusely prominent basal angles, feebly sculptured; elytra broadly, obliquely truncate, elongate, cuneiform, flattened and strongly sculptured in the type; third hind tarsal joint narrow but bilobed. [Type *Ophistomis ventralis* Horn]. Neotropical to southern Arizona. ..... **Cyphonotida**

8—Elytra cuneiform 9

Elytra very elongate, attenuated as in *Ophistomis* and with sinuate sides posteriorly, the apices rounded 12

9—Tarsi hairy throughout and generally notably stout, the third joint of the posterior short and bilobed; elytra usually shining, sparsely punctate and with transversely banded ornamentation, somewhat

as in *Typocerus*. [Type *X. corusca* n. sp.]. Pacific to Atlantic regions.....**Xestoleptura**

Tarsi not notably hairy above.....10

10—Third hind tarsal joint slender and elongate, emarginate at tip; elytra with feebly arcuate sides to the apices, dark, evenly quadrifasciate with bright yellow; body small in size. [Type *Lept. tribalteata* Lec.]. Pacific regions.....**Stenostrophia**

Third hind tarsal joint shorter and deeply bilobed, a little less abbreviated sometimes, as in the aberrant *matthewsi* Lec.....11

11—Body relatively short and very stout in form, the prothorax transverse, usually strongly angulate at the sides; elytra rounded at the sides to the apices, black, transversely but irregularly fasciate with bright yellow. [Type *Lept. læta* Lec.]. Atlantic to Pacific regions. **Strophiona**

Body more elongate, the elytra longer and generally more cuneiform, the ornamentation never transversely fasciate; prothorax well developed, generally more or less transverse and prominent at the sides. [Type exclusively European]. Atlantic to Pacific regions. **Leptura**

12—Front very broad, briefly produced; prothorax very strongly biimpressed; legs long, the third hind tarsal joint bilobed; metepisternum normally broad; body with strong *Ophistoma*-like habitus, alutaceous throughout. [Type *Lept. scalaris* Say]. Atlantic regions. **Bellamira**

13—Front broad and short before the antennæ; body rather obese; prothorax biconstricted, the elytra narrowed behind with arcuate external outline, convex, ornamented with spots transversely arranged; legs only moderately elongate; third hind tarsal joint but slightly elongate, bilobed. [Type *Lept. velutina* Oliv.]. Atlantic regions.....**Typocerus**

Front narrowed and more or less strongly produced; body slender; prothorax not biconstricted, the apex with only the apical beading; elytra attenuate behind, with more or less sinuate external outline, the ornamentation variable; legs long, very slender, the third hind tarsal joint generally very slender, elongate, emarginate at apex. [Type assumed *O. fulvicornis* Bates]. Neotropical and neosubarctic regions. *Strangalia* Lec. and Horn.....**Ophistomis**

Some use has been made above of the form of the third hind tarsal joint, which is greatly diversified and somewhat variable even within the restricted genera here defined, so that its real value is by no means definitely fixed. In *matthewsi*, for example, it is not so short as in other forms of *Leptura* as here limited, but that species is aberrant in having the tibial spurs slightly ante-apical, to some degree recalling *Stenocorus*. There are about fifteen described species in the old *Leptura* complex that I have not seen, but these can readily be assigned to the above genera by those possessing

them, unless a few may warrant still further generic definition. The genera as here delimited are apparently valid; at least, it would not be easy to say just which of them should have the subgeneric status, as they differ among themselves strikingly in general habitus or in some marked structural features.

Judolia Muls.

In our fauna this genus, which is distinguished by the robust form of body and tibial modifications of the male, will include, besides the European *sexmaculata* of Linné, and the closely allied *vexatrix* Mann., from the Kenai Peninsula of Alaska, *cordifera* Oliv., *instabilis* Hald., *convexa* and *quadrata*, which are specifically valid, *sexspilota*, *quadrillum* and *impura* of LeConte, *gaurotoides* Csy., and *flaviventris* Schf.; *guarotoides* is aberrant in its uniformly deep black coloration and in having the shortest and relatively thickest antennæ known to me among the allies of *Leptura*, excepting *brevicornis* Lec. Besides these species, there are the following hitherto undescribed:

Judolia pacifica n. sp.—A little narrower than *convexa* and stouter than *cordifera*, colored and ornamented almost exactly as in the former and *instabilis*, the sculpture similar but much finer than in *instabilis*, the prothorax much less prominent at the sides than in those two species and resembling *cordifera* in this respect; head small, densely punctured, the front only moderately prolonged; antennæ (♂) unusually long for this group, being fully as long as the body, slender, not in the least thickened apically, nearly as in *cordifera* but less slender; prothorax as in *cordifera* but smaller, less full anteriorly at the sides and with the basal angles laterally more prominent; elytra much more sparsely and strongly punctured, even more sparsely so than in *convexa*, which they resemble in form and maculation, excepting that the apices are much more acute; abdomen more densely and strongly punctulate and pubescent than in either of those species, the fifth segment broadly, feebly impressed posteriorly. Length (♂) 9.7 mm.; width 4.1 mm. California.

The hind tibiæ of the male are but slightly modified, the serrules along the inner edge feeble and very irregular, much less strong than in *cordifera* or *instabilis* and without the contorted inner flattening of the former species or *quadrillum*. This species is more closely allied to *convexa* than any other, but differs in the much longer antennæ, less prominent sides of the prothorax, denser and more conspicuous abdominal sculpture and vestiture, narrower outline, still smaller head, more acute elytral tips and other features.

Judolia trajecta n. sp.—General form and coloration as in *pacifica* but more convex, black, the elytra pale straw-yellow, with an almost even parallel transverse black fascia from side to side at basal fourth, the two post median spots and black apex nearly as in *pacifica*, *convexa* and *instabilis;* head and prothorax strongly, very densely punctured but with the pubescence sparser, less pale in color and much less conspicuous, not at all concealing the sculpture; antennæ (♂) moderately long and slender, filiform, not quite as long as the body; prothorax wider than long, strongly campanulate, with laterally prominent acute basal angles and a feeble lateral protuberance before the middle, nearly as in *pacifica;* elytral punctures nearly as in *convexa* but stronger and differing but little in size anteriorly and posteriorly, separated by about twice their diameters throughout; abdomen rather closely and subasperately punctulate, the last segment obtusely rounded, feebly impressed apically. Length (♂) 9.5 mm.; width 4.0 mm. Colorado (Boulder Co.).

The hind tibiæ of the male are as nearly as possible completely unmodified, the inner serriculate edge being scarcely traceable; the elytral apices are evenly and narrowly rounded.

Judolia convolvens n. sp.—Narrower and more parallel than the preceding species, black throughout, the elytra tawny yellow, maculate with black in a broad vitta from the humeri to slightly behind basal fourth, there becoming transverse, ending obtusely near the suture, also a large rounded marginal spot just behind the middle and a broad apical region, the suture pale (♂) or narrowly black and with all the markings slightly more extended (♀); pubescence pale, rather long but not dense, herissate on the anterior parts; head very densely punctate; antennæ (♂) slender, filiform, the outer joints somewhat keeled on the inner sides, four-fifths as long as the body, or (♀) half as long as the body, with the outer joints notably short; prothorax very convex, with strong punctures, which are dense throughout, except medially in the male alone, where they are noticeably separated, the sides parallel basally, straight and converging in a little less than apical half, the basal angles obtuse, not prominent; elytra two-fifths wider than the prothorax, twice as long as wide, cuneiform, narrowly truncate at tip, with rather strong and close-set punctures, becoming fine apically; abdomen finely, closely punctulate and with rather long close decumbent pale hairs, the last segment (♂) broadly lobed medially at apex and broadly concave, the concavity moderately deep, ill-defined. Length (♂♀) 9.0–9.5 mm.; width 3.2–3.3 mm. California (Siskiyou and Lake Cos.).

Allied rather closely to *quadrillum* Lec., but differing in the pale and not black ground color of the elytra, still more narrowed and prolonged front, this being quite as developed as in many species of *Ophistomis*, in the somewhat less slender antennæ, more distinct obtuse angle at the sides of the prothorax and denser, finer punctulation and more conspicuous vestiture of the abdomen. The hind

tibiæ of the male are sinuate on the outer edge just behind the middle, and thence broader and parallel to the apex, the inner face being irregularly impressed almost throughout. In the male of *quadrillum* this tibial character is almost similar, except that the outer sinus is broader, less deep and medial, instead of well behind the middle as it is in *convolvens*. This species has been confounded with *Pachyta vexatrix* Mann., described from the Kenai Peninsula of Alaska; the two are very different, as may be seen at once on reading Mannerheim's ample description.

Brachyleptura n. gen.

The sexual differences in this genus do not seem to affect the tibiæ, but in general bodily facies become extreme in certain species, such as *lætifica* Lec., where the much stouter female has scarlet elytra, each bimaculate with small black spots and the male is smaller, much more slender and entirely black, the elytra rarely being red about the humeri and in a small discal spot near the apex, or in the antennal structure of *lacustris*, where the male antennæ are long and subserrate and those of the female very short, more slender and not in the least serrate. The elytral punctures are often serial in arrangement in part, as in *vagans* and *rubrica*. The genus is a compact and isolated group of species, not closely related to any others and comprises *rubrica* Say, *vagans* and *circumdata* of Olivier, *canadensis* Fabr., *cribripennis*,* *dehiscens*, *lætifica* and *sanguinea* of LeConte and *lacustris* and *haldemani* of the present writer. In addition to these the following may be included:

Brachyleptura subquadrata n. sp.—General form and coloration of the body, legs and antennæ as in *circumdata* but very much stouter;

**Canadensis* and *cribripennis* form a rather isolated group of the genus, owing to the broader and deeper gutter demarcating the very strong apical bead of the prothorax, this having in fact more the appearance of a true constriction than is observable elsewhere in *Brachyleptura*, and in the more appendiculate last antennal joint of the male. That they belong here, though, is plainly shown by the general form of the body, particolored and serriform antennal joints, type of sculpture and ornamentation, typically variable coloration of the elytra and type of male sexual characters, which all harmonize thoroughly with other members of *Brachyleptūra*. These two forms are truly valid species and not connected in any way subspecifically. The male antennæ of *canadensis*, for instance, are invariably deep black throughout, while in *cribripennis* the joints are bicolored as in the female; *canadensis* also is much smaller, opaque and not strongly shining, less coarsely sculptured and more constant in coloration.

head relatively larger, with still more converging and only feebly arcuate tempora, finely, extremely densely punctate; antennæ (♀) longer, being three-fourths as long as the body; prothorax as in *circumdata*, campanulate and very convex but with still more strongly everted basal angles and with the very dense punctures scarcely more than half as large, the short inconspicuous and dusky vestiture similar; elytra two-fifths wider than the prothorax, three-fourths longer than wide, the sides only very feebly converging from the base, pale yellow-brown, the apices and a small humeral spot black; punctures strong but less coarse or dense than in *circumdata;* abdomen less strongly and still somewhat more densely punctate. Length (♀) 7.5 mm.; width 2.7 mm. Colorado. Levette collection.

This species is closely allied to *circumdata;* it is, however, very different in general appearance from any of a good series of that species taken in Massachusetts, that I owe to the kindness of Mr. C. A. Frost, and also one from Pennsylvania, due to its much broader outline, as well as other differences alluded to in the description.

Brachyleptura boulderensis n. sp.—Female nearly as in the female of *lacustris* but with the tempora not slightly converging behind and much less prominent than the eyes, as they are in that species, but protuberant, strongly rounded and more prominent than the eyes, the parallel-sided frontal prolongation equally pronounced but not so broad; body, coloration throughout, sculpture and pubescence as in *lacustris*, black with dark yellowish-red elytra, the head and prothorax not coarsely, extremely densely punctate; elytra two-fifths wider than the prothorax, rather more than twice as long as wide, coarsely, rather closely punctate, much more finely apically, the apices truncate; abdomen finely, evenly, not densely punctulate and with short inconspicuous pubescence. Length (♀) 9.0 mm.; width 2.7 mm. Colorado (Boulder Co.).

Besides the differences above noted, this species differs radically from *lacustris* in the sparser and more evenly distributed abdominal punctulation and relatively narrower and more cuneiform elytra, the external outline of which is less rounding behind to the apical truncature.

The species allied to *vagans* Oliv., are rather numerous; they are of peculiar facies, being very short and rather stout in build, with the elytra short, more or less rapidly narrowed from base to apex, strongly dehiscent apically and always very strongly punctured. The individual species are rather variable in elytral coloration; those in my cabinet may be defined as follows:

Outer antennal joints—those beyond the fifth—testaceous only at base . 2
Outer joints testaceous in basal half or but little less 7

2—Head and prothorax relatively rather large, the latter much wider than long and very coarsely, closely punctate; elytra with the punctures relatively only moderately coarse, close-set throughout, each elytron with two very feeble discal riblets; body black in color, the elytra obscure rufous throughout; testaceous part of the outer antennal joints short and nubilous. Length (♀) 11.5 mm.; width 4.2 mm. Kansas.....**dehiscens** Lec.

Head and prothorax relatively much smaller, the latter fully as long as wide to a little longer; elytra more rapidly narrowed from the base, still shorter and apically more dehiscent, very coarsely punctate basally, rapidly less coarsely apically.....3

3—Male with the last ventral simply feebly impressed medially, the impression not limited laterally by prominent sides, though with the usual apical emargination and prominent acute angles.....4

Male with the last ventral more broadly and apically, more or less deeply excavated, the depression bounded laterally by acutely elevated margins, which posteriorly, form part of the acute apical angles.....5

4—Body deep black, rather shining, the elytra black, with a broad dusky rufous vitta along the summit of the flanks from the humeri to the tips; pubescence not conspicuous, erect anteriorly, short and inclined on the elytra; head very densely punctate and dull; eyes (♂) large, separated by twice their widths, the tempora very oblique and retracted as usual; antennæ four-fifths as long as the body, similar in the sexes; prothorax very convex, parallel, obliquely narrowed anteriorly, coarsely, deeply and closely punctate, with narrow shining interspaces; elytra one-half wider than the prothorax, two-thirds longer than wide, the apices very obtusely rounded; punctures very close-set and without lineal arrangement; last ventral segment (♂) smooth and barely at all punctate, the medial impression very feeble and indefinite. Length (♂♀) 9.5–10.0 mm.; width 3.0–3.5 mm. Wisconsin (Bayfield),—Wickham; also Ontario.

cuneatula n. sp.

5—Head with the punctures rather small and very densely crowded, giving an opaque appearance; eyes (♂) separated by barely twice their width; antennæ nearly as in the two preceding species; prothorax very convex, with the herissate vestiture unusually obvious, the punctures close-set or dense, rather coarse (♂) or less so (♀); sides almost evenly converging and broadly arcuate from base to apex; elytra two-fifths wider than the prothorax, short and very rapidly cuneiform, the apices narrowly and arcuately subtruncate; external outline posteriorly notably sinuate (♂), or feebly arcuate to the tip (♀), the punctures very coarse, deep and close basally, sometimes with traces of lineal arrangement postero-externally, pale red-brown throughout in specimens at hand. Length (♂♀) 7.5–9.0 mm.; width 2.5–3.2 mm. Northeastern States and Canada. [*brevis* Kirby].....**vagans** Oliv.

Head with the punctures larger, not so crowded, the lustre not opaque..6

6—Black, somewhat shining; elytra pale red-brown, the suture infuscate in the type from near the scutellum to the apices, which are nar-

rowly and strongly rounded; head transverse as usual, alutaceous, the punctures all distinctly separated by from once to twice their diameters; eyes (♂) separated by a little less than twice their widths; antennæ as in *vagans* but more slender and distinctly shorter; prothorax barely visibly wider than the head, not distinctly wider as in the other species, the sides almost evenly rounded and converging throughout and with similar retracted basal angles, differing from any other species, however, in having the rather coarse punctures somewhat sparse, being separated by from once to twice their diameters; elytra as in *vagans*, except that the punctures basally are not so coarse, the external outline posteriorly not sinuate but straight and the apices much more acutely rounded; concavity of the fifth ventral (♂) broad and deep. Length (♂) 8.0 mm.; width 2.8 mm. Locality unrecorded.....**fusella** n. sp.

Black throughout, except that the elytra sometimes have each a large rounded rufous spot just behind the humeri, extending inwardly to the median line of each; pubescence nearly as in the preceding; head distinctly narrower than the prothorax, the punctures moderate and very close, almost contiguous, the occiput sloping unusually steeply to the neck; eyes separated by slightly more than twice their own widths; antennæ as in *fusella;* prothorax evenly narrowed from base to apex and with unusually feebly arcuate sides, the punctures moderately coarse and slightly separated; basal dorsal constriction evident; elytra barely two-fifths wider than the prothorax, one-half longer than wide, the converging sides becoming barely at all sinuate, the external apical angles unusually distinct, the inner outline rounding; punctures only about one-half as large as in *vagans* and separated by nearly their own diameters basally, smaller and somewhat lineate in arrangement posteroexternally, black, with a large humeral red spot in the type; excavation of the fifth ventral (♂) narrower than in the preceding and still deeper, the elevated side-walls even thinner apically. Length (♂) 7.7 mm.; width 2.6 mm. Locality unrecorded....**puella** n. sp.

7—Body more elongate than in *vagans*, black, the elytra wholly bright red-brown in the type; pubescence rather sparse but coarse, pale, a little longer and more distinct than in *vagans;* head with moderate, densely crowded punctures, the eyes large and very convex as usual; antennæ (♀) extending almost to the tips of the elytra; prothorax fully as long as wide, convex, unusually shining, the punctures coarse, deep and close-set throughout; sides converging and almost evenly arcuate from base to the much narrowed apex, where the small constriction delimiting the apical bead is distinct as in *vagans;* elytra one-half wider than the prothorax, three-fifths longer than wide, larger and longer than in *vagans* and with punctures that are very nearly as coarse basally but less crowded, being in fact clearly separated, much less rapidly or pronouncedly smaller apically; apices narrowly truncate. Length (♀) 10.0 mm.; width 3.5 mm. Pennsylvania (Carlisle Junction),—A. B. Champlain.

champlaini n. sp.

A second male specimen, with entirely black elytra, is placed with the type of *puella* for the present, although there are certain features that do not accord very well; it is evidently stouter, the prothorax broader and with more arcuate sides, the eyes relatively larger, being separated by less than twice their own widths, the outer apical angle of the elytra more obtuse and the punctures of both the prothorax and elytra stronger, though, on the latter, they are equally well separated and better defined on the waxy ground, rather than on the subopaque general surface of *puella*; they are also much stronger posteriorly than in that species. I think that this is a well defined subspecies of *puella*, which may take the name **tetrica** (n. subsp.); its locality is likewise unrecorded. The locality for *dehiscens* is said to be Oregon, and the antennæ are described as "entirely black"; otherwise the Kansas example described above seems to be typical.

Parallelina n. gen.

A few species of small size, generally slender form and parallel elytra constitute this genus, and, as in the preceding genus, form a compact and clearly limited division of the Lepturini. As far as known to me the species assignable to *Parallelina* are *chalybea* Hald., *exigua* and *nana* (with var. *hæmatites*) of Newman, *molybdica* LeConte and *subargentata* and *similis* (*rufibasis* Lec.) of Kirby, also the two described below. Much confusion exists in the *subargentata* group, owing to a very puzzling inconstancy in the coloration of the legs and basal antennal joint, these differences characterizing both *subargentata* and *similis* and seem to indicate polymorphism rather than simple gradual variation. *Similis* differs from *subargentata* in having the elytral sculpture deeper and less close-set, which, with the more dusky and very inconspicuous pubescence, gives the surface much greater lustre; the legs are most frequently black in *subargentata* and bicolored in *similis*. Of forms not examined, I am of the opinion that *ruficeps* Lec., from Georgia, is a distinct species, but am less convinced concerning *rhodopus* Lec., from California, which is black, with entirely red legs; it is however probably distinct also. The following is another species of the *subargentata* group but much smaller and with narrower prothorax:

Parallelina filicornis n. sp.—General form, coloration, sculpture and short pale ashy vestiture as in *subargentata*, but with sparser and feebler

elytral punctures, these being as sparse as in *similis* but feebler and more diffusedly impressed, black throughout in the type; head and very slender antennæ similar; prothorax longer than wide, slightly narrower than the head, otherwise nearly similar; elytra narrower and only about a third wider than the prothorax, two and one-half times as long as wide; abdomen shining, the fine punctulation not dense, the ashy hairs decumbent; legs slender, shorter, the tarsi extremely slender, much more so than in *subargentata*. Length (♂) 5.5 mm.; width 1.3 mm. Washington State.

In *subargentata* and *similis* the prothorax is almost as wide as the head, but in *filicornis* it is evidently narrower. The following species is widely distinct from any other known species of the genus in its stouter form:

Parallelina campanifera n. sp.—Stout in form, parallel, moderately convex, shining, alutaceous anteriorly, deep black throughout, the pubescence everywhere short, not dense, dusky and inconspicuous; head small, very finely, closely punctate, the front very short before the eyes though evident; tempora rapidly oblique and feebly arcuate; antennæ (♀) slender, filiform, with the outer joints gradually shorter, not two-thirds as long as the body; prothorax much larger than the head, rather longer than wide, strongly convex, rather strongly, closely punctate, with a narrow impunctate line, the sides gradually and moderately converging and broadly arcuate from base to apex, gradually more strongly so apically, the basal angles everted and very acute; elytra not a third wider than the prothorax, perfectly parallel, two and a third times as long as wide, very broadly obtuse at apex, the apices narrowly subtruncate; punctures as large as those of the prothorax but separated by twice their diameters, fine but asperulate apically; abdomen shining, with minute though ashy vestiture, finely, not densely punctulate, closely so basally, sparsely apically; legs slender, the basal joint of the hind tarsi much longer than the remainder. Length (♀) 8.3 mm.; width 2.7 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

There is no described species with which this can be closely compared. The male is probably notably less stout. The head is unusually small, even for the present genus.

Charisalia n. gen.

The only species at present known to form part of this genus are *americana* Hald., and *capitata* Newm. *Charisalia* is rather closely allied to the preceding, but there is a notable difference in habitus, and the maxillary palpi are much larger and longer than in *Parallelina*. There is a remarkable difference in the form of the fourth palpal joint pertaining to four slender specimens of *capitata* from Ontario, and two larger, stouter and more parallel examples from

Bayfield, Wisconsin, which I have before me; in the former this joint is stouter and very obliquely truncate, while in the latter it is narrower, more elongate and transversely truncate; this may be one of the normal sexual distinctions of the genus, but as I have only two examples of *americana*, both females, in which the palpi are of the Bayfield type, this cannot be decided at present. No such sexual character exists, so far as can be observed, in *Parallelina*.

Strangalepta n. gen.

This genus consists, so far as known to me, of the species *lineola* and *pubera* Say, *rubida* Lec. and *vittata* Oliv. The first varies somewhat geographically and possibly *indirecta* Newm. may have to be restored for the eastern representatives of *lineola*, which are much larger than those of the Mississippi Valley, probably forming a subspecies. In *Strangalepta* there is an unusual development of the tempora, this being observable in *pubera*, as well as *vittata;* they are also subimpunctate and strongly shining as a rule, as in the *basalis* section of *Leptacmœops*. In *vittata* there is a remarkable male tibial character that does not seem to have been mentioned; the hind tibia of that sex is broadly angulated within just behind the middle.

The following undescribed species has just been received:

Strangalepta keeni n. sp.—Form somewhat more abbreviated than in *pubera*, the prothorax nearly as in *lineola*, deep black throughout the body, legs and antennæ, the elytra bright rufous, with the tips, extending forward narrowly and slightly at the sides, black; pubescence rather sparse and inconspicuous, yellowish above, grayer beneath; head finely, very densely punctate and dull, with a very fine smooth median line, the eyes large and prominent, the tempora very much less prominent than the eyes and only about a fourth as long though rather tumid and almost impunctate; antennæ slender, almost as long as the body, the third and fifth joints subequal and much longer than the fourth; prothorax a little longer than wide, campanulate, evenly convex, more strongly punctured than the head and very densely, with a fine smooth median line, broadly impressed medially at base, the basal angles laterally very prominent and acute; elytra moderately cuneiform, about three times as long as wide, one-half wider than the median part of the prothorax, the apices transversely truncate, with blunt sutural and rounded external angles, the surface very shining, the punctures coarse, gradually somewhat less so posteriorly, everywhere very sparse, separated by about four times their diameters; abdomen rather finely punctate, closely basally, more sparsely distally; legs rather long and slender, the basal joint of the hind tarsi not

quite as long as the remainder, the tibiæ unmodified. Length (♂) 10.0 mm.; width 2.8 mm. British Columbia (Inverness).

Allied somewhat to *rubida* Lec., but smaller and with deep black and not fusco-ferruginous legs and much sparser elytral punctures. The single example was one of the last captures of the Rev. J. H. Keen before his final departure for England, and I take great pleasure in naming it in honor of one to whom we owe so many interesting discoveries among the Coleoptera of the Pacific coast.

Strangalia Serv.

There is a strong consistency of habitus pervading this genus, which in our fauna consists of *perductor* Walker, *obliterata*, *abdominalis*, *elegans* and *cruentata* of Haldeman—the last differing somewhat in facies because of its shorter and less cuneiform elytra but connected very well through *plagifera*,—*subhamata* and *plebeja* Rand., *propinqua* Bland, and *vitiosa*—which is not by any means a variety of *obliterata*,—*deleta*, *soror* and *plagifera* of LeConte. *Elegans* is not a variety of *subhamata* but quite distinct, as shown by the females in my collection, the prothorax being much broader in *elegans*, as well as differently ornamented; the males of this species are very much more slender than the females and very differently colored, being largely black, the sutural black vitta being peculiarly sagittiform in a way not suggested in the female. *Abdominalis* has a marked peculiarity of thoracic sculpture and a different scheme of elytral ornamentation; it might very rationally be separated as a subgenus. The far western species allied to *obliterata* are numerous, very uniform in ornamentation and facies and, so far as represented in my collection, may be defined as follows:

Elytra each with a black discal spot near basal third; apical black area not extending to the tip but there becoming dusky rufous.....2
Elytra never with trace of the black discal area, the black apical area extending to the apices.....4
Elytra similarly devoid of the black discal area but rather brightly pale at apex.....7
2—External apical angles of the elytra very acute and slightly everted; submedian black band of the elytra broadly interrupted at the suture. Length (♀—as usual, only to the elytral tips) 15.8 mm.; width 5.5 mm. Vancouver Island.....**perductor** Walk.
External apical angles acute but not in the least everted, the external outline of the elytra continuing the feeble arcuation to their tips..3

3—Last dorsal segment (♀) rapidly narrowing from the very broad base to the apex, which is obtuse though much narrower than in the preceding; coloration and sculpture nearly similar, the body distinctly less stout. Length (♂ ♀) 13.0–14.5 mm.; width 3.8–5.1 mm. Oregon (Clackamas Co.).....**obliterata** Hald.

Last dorsal (♀) very much narrower at base, the sides much more gradually converging to the similarly obtuse apex; body similar in coloration and sculpture but much smaller in size and with relatively smaller head; antennæ (♀) shorter than in the two preceding; occiput less steeply declivous to the neck; pronotum nearly as in *obliterata*, less opaque and more strongly punctured than in *perductor;* last ventral (♀) less impressed at apex. Length (♂ ♀) 11.0–12.5 mm.; width 3.3–4.0 mm. Idaho.....**idahoensis** n. sp.

4—Prothorax testaceous, with a broad black discal area extending from apex to base, the entire prosternum also black; pubescence throughout much longer, paler and more distinct than in the preceding three species; front more strongly produced; outer antennal joints more strongly bicolored; pronotal punctures finer and denser, the surface opaque; outer angle at the elytral apex more prolonged posteriorly. Length (♀) 14.0–15.7 mm.; width 4.3–5.0 mm. California. Four exactly similar examples.....**vitiosa** Lec.

Prothorax wholly black or with a testaceous vitta basally on the inflexed sides and not appearing dorsally; body smaller in size and of much narrower outline.....5

5—Last dorsal segment (♀) strongly compressed and elevated basally, probably however partially due to lateral shrinkage in the only female example at hand, its entire surface finely, rather closely punctulate, with the short hairs pale and very evident; thoracic base very broadly and gradually lobed medially; elytral punctures more close-set than in either of the two following, being separated by about twice their diameters basally; head rather well developed, the eyes (♀) separated at the minimum by three times their width. Length (♂ ♀) 11.0–12.0 mm.; width 3.5–3.8 mm. Washington State and Idaho.....**propinqua** Bland

Last dorsal segment not strongly elevated medially toward base and with the punctures throughout very much sparser in *minuscula* and with different pubescence in *regularis;* elytral punctures sparser, separated basally by two to three times their diameters.....6

6—Body rather larger and stouter, with more elongate elytra, black, the antennæ and legs deep black throughout; sculpture, vestiture and elytral coloration as in *propinqua;* head similar; antennæ (♀) much longer, the outer joints not so abbreviated, the fourth joint relatively longer; prothorax similar, except that the median lobe at the base is relatively much narrower, being only a third as wide as the base; elytra more rapidly cuneiform from the base; last dorsal segment larger, broader at base, more rapidly cuneiform, the punctures similarly numerous but with the hairs much more minute, less pale and very inconspicuous. Length (♀) 13.0 mm.; width 4.0 mm. Locality unrecorded.....**regularis** n. sp.

Body smaller and narrower; head (♀) smaller and with the eyes separated

by less than three times their width, their inner margins much more converging than in either of the preceding; antennæ nearly as in *propinqua*, except that they are still somewhat more slender; prothorax similar; last dorsal segment nearly similar in outline, but with the fine punctures twice as sparse. Length (♂♀) 9.5–11.0 mm.; width 2.7–3.4 mm. Colorado. Levette collection.

minuscula n. sp.

7—Form narrow; size small; color black, the entire abdomen, except at base, and the legs, as well as the antennal prominences as usual, pale; elytra pale, with a small marginal spot behind the humeri, a transverse entire fascia before the middle and another near apical fourth, black; sculpture and vestiture nearly as in the other species; antennæ notably shorter, dusky testaceous, the outer joints partially infuscate. Length (♂) 9.7 mm.; width 2.9 mm. California.

soror Lec.

A number of Walker's species will have to be reinstated, having been too hastily reduced to synonymy; another very conspicuous instance occurs in the genus *Acanthocinus* of our present lists, as will appear.

Cyphonotida n. gen.

The type of this genus is *Ophistomis ventralis* Horn, described (Proc. Cal. Acad. Sci., ser. 2, IV, p. 401) from Lower California but apparently the same as the species that I sent to Mr. Bates many years ago for remark. The statements of that author (Ann. N. Y. Acad., VI, p. 41) would seem to show that it is closely allied to *lævicollis* Bates, though possibly different. The antennæ have no trace of poriferous sensitive areas and the genus is evidently a member of the Lepturid and not of the Ophistomid series. It was surmised by Bates that it should be separated generically from *Ophistomis*, but he gave scarcely any reason beyond the very convex and anteriorly declivous pronotum.

Xestoleptura n. gen.

A genus largely developed on the Pacific coast and almost confined to those regions, the only Atlantic coast species known to me, *octonotata*, being of peculiar habitus, due to its much narrower and more elongate form and different though analogous ornamentation. The *crassipes* group has given rise to much confusion, owing to the numerous more or less local developments as in *Omus*, *Brennus* and other Pacific coast groups. LeConte having described *crassipes* from the male and *crassicornis* from the female, could readily be

made a plausible pretext for suggested synonymy by one so inclined; but in reality *crassicornis* is a decidedly different species from *crassipes*, not only because of its much larger size but in its style of elytral maculation, as well as other features. Besides *crassipes* and *crassicornis* of LeConte, *Xestoleptura* will include a number of species and subspecies related to *crassipes*, as defined below, as well as *behrensi* Lec., *octonotata* Say and the two following very distinct species:

Xestoleptura corusca n. sp.—Moderately stout and convex, black and very strongly shining, the abdomen bright red throughout, the legs and antennæ wholly pale ferruginous; elytra with three moderately broad, successively decreasing yellow fasciæ, interrupted at the suture, basal, at basal third and just behind the middle, each also sometimes with a small pale spot near the apex near inner third; pubescence pale, not dense, erect and bristling anteriorly, short, sparse and inclined on the elytra; head rather convex, strongly and densely punctate, the tempora nearly as prominent as the eyes, gradually arcuato-converging to the nuchal constriction, which is impunctate; antennæ (♂) heavy and long, extending to apical fourth of the elytra, subcompressed, serrulate except basally, very pale and uniform testaceo-ferruginous in color; prothorax barely wider than the head, rather longer than wide, constricted and moderately narrowed at apex, subparallel basally, the basal angles not prominent; punctures coarse laterally, finer medially, everywhere well separated; elytra four-fifths wider than the prothorax, rather more than twice as long as wide, strongly cuneiform, with nearly straight sides, the rounding apices narrowly truncate at the suture; surface very sparsely punctate, finely basally, still more minutely apically; legs stout; tarsi stout, the posterior longer than the tibiæ, coarsely and pallidly hairy throughout. Length (♂) 12.7 mm.; width 4.0–4.2 mm. California (Grant Forest),—Hopping.

Not closely allied to any other species and readily determinable from the characters given in the description; it is one of the most shining Lepturids known from our faunal regions.

Xestoleptura columbica n. sp.—Narrower, more parallel (♀), convex, deep black throughout excepting the elytra, the tibiæ pale, dark at tip; tarsi missing in the type; pubescence short and coarse, close and erect but not conspicuous anteriorly; head moderately strongly, closely punctate, with a medial stria; tempora scarcely at all less prominent than the eyes, rounding behind them to the nuchal constriction, which is not impunctate; antennæ slender, deep black, moderate in length; prothorax equal in width to the head, scarcely as long as wide, rather finely but strongly, very densely punctate throughout, the sides parallel and barely sinuate to beyond the middle, then feebly oblique to the unusually broad apex, the constriction only moderate, much less developed than in the preceding or in the *crassipes* type; elytra distinctly cuneiform,

only one-half wider than the prothorax, pale luteous in color, with a very broad black fascia on each from behind the humerus to the pale sutural bead, a rounded marginal spot at the middle, the apices black in distinctly less than apical third, prolonged along the suture, diminishing, nearly to the oblique fascia and enclosing the usual pale subapical spot; punctures moderately strong, perforate, separated by twice their diameters to but little more, fine and relatively sparser apically. Length (♀) 11.0 mm.; width 3.7 mm. British Columbia,—Keen.

Recognizable very readily from *crassipes* and allies by the much stouter head and prothorax, cuneiform and not parallel elytra in the female, fuller tempora and many other features.

In the *crassipes* group there is a very marked and constant sexual difference in the form and ornamentation of the elytra, these being strongly cuneiform in the male, with the basal two-fifths to half wholly pale and devoid of maculation, excepting a small marginal post-humeral black spot; there is a submedian black fascia, usually broadly interrupted at the suture, and the posterior third is solidly black, excepting a small pale subapical spot. In the female the elytra are perfectly parallel, much more broadly obtuse at apex, and there is always an oblique discal fascia from behind the humeri to or toward the suture, a large rounded marginal spot at the middle and a black area in rather less than apical third and including a much larger pale area, the black area more or less prolonged anteriorly and narrowly along the suture, usually to the oblique fascia. The coloration of the abdomen and antennæ is variable and they are generally much paler in the female; the abdomen is narrowly fasciate with a darker tint in the female as a rule.

In treating of the allies of *crassipes* before me, I will not include the distinct *crassicornis*, for the original description of the female of that species states that it is ferruginous, shining, the elytra sparsely and finely punctate, with the three fasciæ and the black apex all connected at the suture and margin; the prothorax is densely, anteriorly more finely, punctate and apparently has the usual form of the *crassipes* group; the antennæ of the female are stout and not at all more than half as long as the body; the length of the female type, which is from an unrecorded part of California, is 15 mm. This could by scarcely any possibility be the female of *corusca*, above described, because the sculpture of the prothorax differs greatly and there is no such marked sexual disparity in the antennæ or coloration

of the body, as would be implied, now known among the other species of the genus. The close allies of *crassipes* may be distinguished as follows; since the coloration in both sexes is constantly as above described, only the salient points of difference will be mentioned:

Metepisternum coarsely punctured posteriorly, finely and densely so anteriorly; elytral punctures throughout well separated, moderate in size basally, fine distally; male antennæ extending nearly to the tips of the elytra; pronotal punctures small but perforate, very close-set but distinct; female elytra parallel nearly to the tips, there rather rapidly rounding. Length (♂ ♀) 9.0–11.7 mm.; width 2.8–3.7 mm. Pacific coast (from Sta. Cruz Co., Cal., to Vancouver Island). [*xanthogaster* and *fasciventris* Lec.]..... **crassipes** Lec.

A—Nearly similar, except that the head and prothorax are relatively smaller, the latter shorter and with the fine punctures so dense as to be discerned individually with difficulty; elytral punctures basally distinctly more close-set; antennæ (♂) a little shorter. Length (♂) 9.0 mm.; width 2.8 mm. California (Mount Shasta). **shastana** n. subsp.

Metepisternum coarsely punctured throughout; body black, shining, the abdomen yellow, with faintly dusky fasciæ; legs pale; antennæ pale, dusky at base and on the outer joints except toward their bases, the tenth joint more than twice as long as wide; prothorax strongly punctate, the punctures separated by their own diameters or more medially; elytra (♀) parallel but gradually narrowing from slightly behind the middle, very gradually rounding to the narrow sutural truncatures, the punctures sparser than in the preceding. Length (♀) 10.5 mm.; width 3.0 mm. Vancouver Island. **vancouveri** n. sp.

Metepisternum finely, more closely punctured throughout, with a few larger punctures interspersed posteriorly; body much larger, stouter, similar in coloration, except that the slender abdominal fasciæ are black in the type; antennæ shorter and stouter, the tenth joint (♀) not quite twice as long as wide; prothorax larger, everywhere extremely densely and evenly punctate, the punctures fine but deep, perforate and distinct; elytra parallel to near the tips, there rapidly rounding as in *crassipes*, the punctures finer and sparser, except through a relatively shorter distance basally, the maculation nearly similar, except that the median lateral spot is more transverse and more broadly isolated; abdomen more densely punctulate. Length (♀) 13.5 mm.; width 4.3 mm. California (locality unrecorded). **muliebris** n. sp.

The different outline of the elytra posteriorly in *vancouveri*, is well marked and distinctive, as well as the stronger and sparser thoracic sculpture; *muliebris* also has a distinct appearance when compared with the female of *crassipes*.

Possibly *rufula* Hald., from Lake Superior, may also enter this genus, but I have no example of it at present.

Stenostrophia n. gen.

The ornamentation in this genus is wholly unlike that observable in any of the preceding, excepting *Xestoleptura*, where it is foretold in such species as *corusca*. The species composing *Stenostrophia* are small in size, rather narrow, though moderately inflated and suboval in the female; they are, so far as discovered, *tribalteata* Lec., *serpentina* Csy., and *coquilletti* Linell—all from the Pacific coast regions. *Serpentina* has been hastily united with *tribalteata* but is a valid species, differing greatly in the structure of the antennæ, particularly those of the male, where those organs are long, slender and filiform, being scarcely at all shorter than the body and are constantly testaceous in color throughout; in *tribalteata* they are much thicker, shorter, more compact, differ less sexually and are always deep black in color. My two examples of *coquilletti*, from San Diego, indicate remarkable sexual diversity, the pubescence of the female being longer, coarser and very dense, with the punctures of the pronotum strong and extremely close-set, while in the male the pubescence is shorter, finer and sparse, the punctures of the prothorax being finer, feebler and notably sparse throughout. I have noted no such sexual characters in the allied *tribalteata* and *serpentina*, and it would be desirable to have more material, carefully collected, before announcing these differences as wholly due to sex. The large series in the National Museum, from which Linell described the species, includes both the forms mentioned.

Strophiona n. gen.

In this genus the species are stouter than in any other, very constantly and distinctively ornamented by transverse pallid bands, but in a way quite different from that characterizing the preceding genus, from which also they differ in the more prominent sides of the prothorax and form of the third hind tarsal joint. The described species are *nitens* Forst., from the Atlantic regions and *læta* Lec., from California. The six species in my collection may be outlined as follows, the ornamentation being of the same type throughout, with only more or less slight variation:

Antennæ more slender, extending to the posterior parts of the elytra in the male, much shorter in the female; species eastern in range, not crossing the Rocky Mountains to the westward.....2

Antennæ shorter and much stouter, extending barely beyond the middle of the elytra even in the male; species of the far west, not crossing the Rocky Mountains to the eastward; second and third elytral fasciæ broadly united at the suture in both sexes, the first tending to unite with the second at the suture.....3

2—Head evidently narrower than the prothorax in both sexes, though less distinctly so in the male, the elytra in the latter sex more elongate, only very gradually cuneiform, more than twice as long as wide, the second and third fasciæ narrow, seldom exhibiting any tendency to unite by sutural extension; pronotal punctures fine, irregular in distribution, generally close-set. Length (♂) 10.5–11.8 mm.; (♀) 9.5–12.7 mm.; width (♂) 3.6–3.9 mm., (♀) 3.4–4.7 mm. Rhode Island, New Jersey and Pennsylvania.

nitens Forst.

Head in the male about as wide as the prothorax, the elytra in that sex very much shorter, relatively broader at base and rapidly cuneiform, not quite twice as long as wide, the external apical angle not so posteriorly prolonged as in *nitens* and very minutely dentiform; second and third golden fasciæ broadly uniting longitudinally at the suture; pronotal punctures not quite so small and less close-set. Length (♂) 11.8 mm.; width 4.1 mm. Colorado.....**bellina** n. sp.

3—Prothorax large, wider than long, strongly angulated and prominent at the sides just before the middle; body more obese.....4

Prothorax about as long as wide, only slightly and arcuately subinflated at the sides before the middle.....5

4—Elytra in the female shorter, much less than twice as long as wide, more strongly cuneiform than in *nitens*, minutely, not densely punctulate; pronotal punctures much stronger, moderately close-set; basal joint of the antennæ slender, arcuate and narrow basally, somewhat inflated apically; last dorsal segment of the abdomen triangular, flat, narrowly rounded at tip. Length (♀) 13.0 mm.; width 5.3 mm. California (near Sacramento—the type locality).....**læta** Lec.

Elytra in the female longer, more gradually though strongly cuneiform, very nearly twice as long as wide, the punctures twice as large and relatively denser; pronotal punctures not quite so strong as in *læta* and denser; basal joint of the antennæ thicker, evenly obconical; last dorsal segment of the abdomen slightly convex, differing greatly from *læta* in having the sides feebly converging to the much more broadly rounded apex. Length (♀) 15.0 mm.; width 5.6 mm. New Mexico.....**ostenta** n. sp.

5—Head (♂) as wide as the prothorax, very densely punctate and opaque, the antennæ moderately thick, the tenth joint more than twice as long as wide; prothorax with almost even, rather strong punctures, separated by from once to nearly twice their diameters, the vestiture coarser and more evenly distributed than in *læta;* elytra strongly cuneiform, four-fifths longer than wide, very finely and closely punctate; lateral beading and contiguous flanks testaceous through-

out the length, rather widely and equally separating the black areas from the side margin. Length (♂) 10.5 mm.; width 3.7 mm. California (Los Angeles).....**tigrina** n. sp.

Head (♂) obviously narrower than the prothorax, much less developed than in *tigrina* and not so densely punctate, the interspaces shining; antennæ nearly similar, dusky-testaceous throughout and very opaque except basally, the tenth joint not quite twice as long as wide; prothorax shining, the punctures rather strong and sparse, dense only laterally, the vestiture long, rather sparse, not at all concealing the surface; elytra narrower, moderately cuneiform, barely a third wider than the prothorax, with stronger and more separated punctures than in *tigrina*, the flanks not pale along the pale lateral bead; legs more slender; body much smaller and narrower than in *tigrina*. Length (♂) 8.8 mm.; width 3.0 mm. California (locality unrecorded).....**reducta** n. sp.

There seems to be no suggestion of sexual diversity in thoracic punctuation or vestiture in this genus, and I have but little doubt that the species above defined are amply valid, though described from very limited material except in the case of *nitens*.

Leptura Linn.

In our fauna this genus, which has been the recipient of many discordant elements and, as now organized, has become a very discouraging complex, in which species obviously allied are sometimes widely separated in the series, may be divided very satisfactorily into well defined subgeneric groups as follows:

Antennæ shorter, never as long as the body in either sex.....2
Antennæ longer, as long as the body to much longer in the male.....4
2—Maxillary palpi more developed, very long; body large, the hind body strongly cuneiform.....Group I
Maxillary palpi of moderate size; hind body less convex or cuneiform as a rule.....3
3—Prothorax rounded at the sides, or at least not angulate; last dorsal segment of the female simple.....Group II
Prothorax strongly angulated at the sides; last dorsal of the female strongly carinate apically.....Group III
4—Tibial spurs slightly ante-apical in insertion; tarsi less slender, somewhat hairy above as well as beneath; prothorax rounded to somewhat prominent at the sides.....Group IV
Tibial spurs apical; tarsi extremely slender, scarcely at all hairy above; prothorax of peculiar structure, being a truncated cone with slightly arcuate median parts of the sides, or a regular trapezoid slightly prominent at apex and base.....Group V

The third hind tarsal joint is strictly bilobed throughout. There

are probably some other subgeneric groups in our fauna, necessitated by species that I do not have before me at present, such perhaps as *brevicornis* Lec.

Group I.

Subgenus **Megaleptura** nov.

The two very large and conspicuous species *emarginata* Fabr., and *gigas* Lec., alone constitute this rather isolated subgenus. They are well known, though owing to their strong and high flight, are difficult to capture and therefore not over common in collections. They are throughout of a brilliant glossy black, the elytra dull and rufous, with black tips, feebly and closely lyrate in *gigas*, plain in *emarginata*.

Group II.

Subgenus **Cosmosalia** nov.

There are eight species in my collection assignable to this subgenus, comprising, among those heretofore described, *nigrella* Say and the closely allied though more elongate *carbonata* Lec., also *auripilis* and *dolorosa* of LeConte, *chrysocoma* Kirby—the type of the subgenus—and *nigrolineata* Bland; it is probable that *coccinea* Lec., should also be included. The following is allied to *nigrella* and *carbonata:*

Leptura (Cosmosalia) præstans n. sp.—Form very elongate, narrower and rather less convex than *carbonata*, deep black and moderately shining, the elytra throughout bright red, excepting a marginal sharply defined streak of black in posterior two-fifths; pubescence very short, blackish, erect on the anterior parts; head moderately finely, very densely punctate, the tempora slightly more prominent than the eyes, tumid and subangulate, transverse at base; antennæ (♀) rather slender, extending barely at all behind the middle, the tenth joint twice as long as wide; prothorax as in *nigrella* but more unevenly punctate, the punctures medially and laterally moderately coarse and densely confluent, between these areas coarser and well separated, the smooth median line distinct, tumid on the basal declivity; elytra two and one-half times as long as wide, two-thirds wider than the prothorax, the sides parallel, abruptly rounding near the middle, thence straight and moderately converging to the broad apical arcuation extending to the narrowly sinuate apices, the punctures a little smaller and less close-set than in *nigrella* or *carbonata*, much less rapidly coarser basally than in the latter; abdomen shining, finely, sparsely punctate. Length (♀) 19.0 mm.; width 5.8 mm. Colorado.

The last dorsal segment of the abdomen is broader basally and with more strongly converging sides than in either of the species mentioned in the description. In *nigrella* the male elytra are dark brown in color throughout.

The following species is allied to *auripilis* and *chrysocoma*, which are amply distinct and by no means connected subspecifically; *auripilis* is twice as large as *auricoma* and differs in its much less crowded and more distinct thoracic punctures, as well as in the less rapidly cuneiform elytra and many other features:

Leptura (**Cosmosalia**) **aureola** n. sp.—Form, size and vestiture nearly as in *auripilis* Lec.; head and antennæ nearly similar, except that the latter are not black throughout but become largely pale testaceous basally, excepting the basal joint, which is black; prothorax of similar outline but less densely pubescent, the hairs shorter, the punctures much less close-set, being separated medially by two to three times their diameters; elytra nearly similar but with the punctures less fine, differing distinctly in the external outline apically, which here rounds in more rapidly to the narrower apical truncatures. Length (♀) 16.8 mm.; width 5.5 mm. Colorado.

The two type examples, from the Levette collection, are perfectly similar and have been compared with a typical female of *auripilis* from Jemez Springs, New Mexico, virtually the type locality, which is Santa Fé. The fourth palpal joint in *auripilis* has a very deep excavation extending from near the base to and through the truncate apex. A third female of *aureola* before me, from Boulder Co., Colorado, more clearly displaying the palpi and differing from the types only in having entirely black antennæ—possibly from greater maturity—the fourth palpal joint is very different, having only a very feeble elliptical flattening, extending from basal to apical third of the length. A single male, also from Boulder Co., is much smaller and very much more slender than the female and has the fifth ventral broadly, rectilinearly truncate at apex, with broadly rounded angles at the sides. The prothorax is relatively distinctly larger in *auripilis* than in *aureola*.

Group III.

Subgenus **Cercolia** nov.

Two similarly colored species alone compose this subgenus, as far as known to me. They are deep black throughout the body, legs and antennæ, and with hexagonal, strongly, very densely

punctate prothorax, but the elytra are pale reddish or yellowish brown, with the apices black; the pubescence is fine, rather long, erect and distinct on the anterior parts, short, inclined and sparse on the elytra; they may be distinguished as follows:

Elytral punctures close-set throughout and especially on the flanks, where they are subcontiguous; body stouter and larger, the black apical area of the elytra not ascending at the sides. Male only moderately narrower and with more cuneiform elytra than the female and much more closely punctate; fifth ventral segment remarkably modified, broadly arcuato-truncate at apex, with an acute sharp incision, triangular in form, deeper than wide and extending almost to the base of the segment. Female with the ridge of the last dorsal segment horizontal along its summit to the extreme apex, often turned upward and very prominent at tip; abdomen finely, feebly and not densely punctate. Length (♂♀) 13.0–16.8 mm.; width 4.4–6.0 mm. Pennsylvania to Wisconsin (Bayfield).

proxima Say

Elytral punctures not quite so coarse and everywhere distinctly separated, black of the elytral apices ascending at the sides. Male smaller and narrower than in *proxima*, with the elytra more rapidly cuneiform and relatively much more acutely rounded at apex, the narrow truncatures similar, otherwise nearly as in *proxima*, except that the sides of the prothorax are not so strongly angulated and the antennæ a little shorter; fifth ventral segment differing profoundly, being evenly truncate at apex and without trace of sinus or incisure; abdomen still more densely punctulate. Female not at hand. Length (♂) 11.7–12.5 mm.; width 4.0–4.2 mm. Wisconsin (Bayfield),—Wickham.....**minnesotana** n. sp.

That two forms, resembling each other so closely and occurring in the same locality, should differ so radically in male sexual characters as to render any other assumption than that of a truly specific status quite untenable, is most remarkable; the condition exists, however, in many other parts of the Coleoptera, such as *Reichenbachius* and *Lachnosterna*, and serves to point a moral against such hasty verdicts concerning specific identity as seem to be the fashion in many quarters.

Group IV.

Subgenus **Dorcasina** nov.

The coloration and style of ornamentation are as constant through the four species of this subgenus as among the members of the preceding group, the body, legs and antennæ being pale, the elytra each with a cloud-like rounded black spot externally near

the middle. The sculpture is generally rather fine and dense, but becomes coarser in the Atlantic coast species, which differ also in their more slender form and more slender antennæ, which are less opaque near the base. The prothorax is campanulate, with the basal angles laterally prominent and acute in the western species, but not at all so in the Atlantic species; the sides are sometimes prominent medially. The vestiture is very short throughout, a little longer and less erect on the prothorax of the eastern representatives. The species so far as known to me may be thus defined in brief, *matthewsi* being the type:

Species of the Pacific coast, stout, the prothorax strongly campanulate; lustre rather dull almost throughout.....2

Species of the Atlantic coast, more slender, the prothorax less campanulate, broadly rounded to obtusely angulate at the sides but with the basal angles not at all prominent; antennæ more slender, not opaque throughout.....3

2—Hind body shorter, the elytra very rapidly cuneiform (♂), or feebly so with more rounded sides (♀); head and prothorax finely, extremely densely punctate and dull, the elytra with moderately coarse, very close-set punctures, becoming fine apically, the apices obtuse, not evidently truncate, the angles all rounded; tarsi moderate, the posterior (♂) distinctly shorter than the tibiæ. Length (♂) 10.0–14.0, (♀) 12.0 mm.; width (♂) 3.2–4.8, (♀) 4.4 mm. California (Sta. Cruz Co.).....**matthewsi** Lec.

Hind body more elongate, the size larger, the male antennæ still more elongate, more than one-half longer than the body, the last joint 4 mm. in length in the type, the fifth 2.6 mm.; prothorax more strongly and distinctly punctate, the punctures dense but becoming well separated medially, except anteriorly, the surface feebly and broadly impressed along the middle from about the centre to the broad apical constriction; elytra longer, more gradually cuneiform (♂), or less cuneiform, with slightly arcuate sides posteriorly and much broader (♀); the punctures nearly similar but less close-set; tarsi much longer, the posterior (♂) as long as the tibiæ, or distinctly shorter (♀). Length (♂) 14.6, (♀) 17.0 mm.; width (♂) 4.8, (♀) 6.2 mm. California (Gualala, Mendocino Co.).....**macrocera** n. sp.

3—Body moderately slender, convex, somewhat shining, pale luteous throughout, excepting a small blackish external medial spot on each elytron and the head, which is piceous and densely, rugosely punctate, the tempora broadly rounded and transverse, more parallel near the eyes; antennæ about a fourth longer than the body, slender and filiform; prothorax barely as long as wide, moderately narrowed at apex, rounded on the sides, biconstricted, the surface somewhat channeled medially between the constrictions, the punctures rather coarse, sparse, uneven in distribution; elytra only moderately cuneiform, rather obtuse at apex, the truncatures sharply defined and

slightly oblique; punctures coarse and close-set, becoming small apically; supplementary apical dorsal segment very broadly arcuato-truncate and obtuse. Length (♂) 11.0 mm.; width 3.6 mm. Pennsylvania..... **biforis** Newm.

Body still more slender, with the elytra more rapidly cuneiform, more acute at apex, with nearly similar truncatures; color pale luteous, the metasternum blackish, the prothorax mottled blackish and dusky rufous, the head black and the elytral spots as in *biforis;* head densely, subrugosely punctate, the tempora subangulate; antennæ not quite so long and rather more slender; prothorax nearly similar but narrower, longer than wide; elytra as coarsely but much less closely punctate; supplementary segment, behind the last dorsal, obtusely but abruptly lobed at the middle of its hind margin; abdomen densely punctulate though rather less densely than in *biforis.* Length (♂) 9.8 mm.; width 3.0 mm. New York (Bluff Point on Lake Champlain)..... **laurentica** n. sp.

It would be almost a certainty that *Lept. gnathoides* of LeConte, belongs to this subgenus, were it not that the antennæ seem too short and heavy; in coloration it agrees with the four species above assigned to it.

Group V.

Subgenus **Trachysida** nov.

This subgenus, which is very isolated in the general habitus of the body, due to the slender form, truncated conical or trapezoidal prothorax and prevalence of dense subasperate sculpture, contains at present, so far as known to me, but three species, *mutabilis* Newm., and *aspera* and *pedalis* of LeConte. *Mutabilis*—the type of the subgenus—is composite, as we have it in our collections, but as the forms are closely allied, large and carefully collected series will be necessary before coming to any definite conclusion. One pair from Marquette, Mich., in my collection, for instance, is of larger size and rather thicker neck than another pair from Bayfield, Wisc.; another, a female, from Wales, Maine, has looser punctuation, a transverse prothorax, very thick neck and fuller tempora than any other, and finally, a good series from Framingham, Mass., given me by C. A. Frost is of smaller size, shorter form and more pubescent prothorax in the male. The elytra may be entirely pale or black in all of these subdivisions, this being an asexual peculiarity as in *Leptacmœops. Quadricollis* of LeConte, also probably enters this subgenus but I have not seen it.

Bellamira Lec.

Although placed as a subgenus of *Strangalia* by Aurivillius, *Bellamira* is I think more correctly a distinct genus. It truly bears a strong superficial resemblance to *Ophistomis* (*Strangalina* Auriv. pars), but an inspection of the front of the head shows a complete dissimilarity, the front before the antennæ being very broad and but little extended, not at all like the narrow produced form characterizing *Ophistomis*. The antennæ, apparently devoid of sensitive pits, ally it more closely with the true *Strangalia*, but the deeply biconstricted prothorax is strikingly different; finally, this singularly composite genus in its male sexual characters displays a complete analogy with our *Ophistomis virilis*, *famelica* and *acuminata*. The genus was represented by *Leptura scalaris* Say alone, until recently (Bull. Bk. Inst., I, p. 342), when Schaeffer added *antennata*, from Arizona.

Typocerus Lec.

This genus was also reduced to the status of a subgenus of *Strangalia* by the author mentioned, but also unnecessarily, as it differs in habitus, type of ornamentation and in possessing a very elaborate system of poriferous sensitive areas on the outer antennal joints. These sensitive impressions or fossæ differ markedly in the sexes, being less extended in the female. Besides the well known *zebra* and *velutinus* of Olivier, the genus will comprise, of described species, *lunatus* Fabr., *badius* and *sinuatus* Newm., *lugubris* Say, *sparsus* and *brunnicornis* of LeConte, and *balteatus* Horn. *Badius* is a Florida species of peculiar appearance, which is extremely rare and local and *balteatus* Horn, is widely distinct in general appearance, having yellow elytra with narrow transverse fasciæ of darker tint; both these species are still desiderata in my collection, but there is a good series of *balteatus* in the collection of the National Museum. The two following species are very distinct in their male sexual characters:

Typocerus confluens n. sp.—Form and size somewhat as in *velutinus*, but more elongate, black, the elytra with the base, nubilously enclosing a more sharply paler subscutellar spot and two transverse series, each composed of two moderate spots, the inner sometimes wanting and sometimes larger, tending to unite with the outer and rarely with themselves along the suture, and a small subapical spot, all pale yellow and rather sharply defined on the black ground; legs pale, the tarsi and tibiæ for

the most part black; head finely, very densely punctate; antennæ black, two-thirds as long as the body (♂), with the outer sensitive areas smaller and feebler than usual, being half to three-fourths as long as the joints, or half as long as the body (♀), with the sensitive areas small and basal; prothorax nearly as in *velutinus*, convex, the punctures rather small, well separated, closer anteriorly; elytra elongate, cuneiform, less so and with more rounded sides in the female, deeply and conspicuously though not coarsely punctate, the punctures well separated basally, becoming very close and a little smaller distally, the apices narrowly and scarcely obliquely truncate, the outer angle not prolonged. Length (♂ ♀) 11.5–13.0 mm.; width 4.0–4.5 mm. Kansas and Colorado.

The fifth ventral in the male is somewhat tumid and has a large and very deep apical excavation, limited by acutely elevated sides posteriorly and extending to basal third, gradually narrowing and becoming extinct. The female is much less abundantly taken than the male, as usual in the genus.

Typocerus caligans n. sp.—Form narrower (♂) or stouter (♀) than in the preceding, rufo-testaceous, the under surface and tarsi picescent; vestiture pale and, as in the preceding, sparser than in *velutinus*, not so concealing the thoracic surface; head less finely, closely but more irregularly punctate than in the preceding, the antennæ blackish, gradually pale basally, strongly serrate distally (♂) and with the sensitive areas paler in tint and very distinct, two-thirds as long as the body, or (♀) shorter though otherwise similar, incrassate and serrate distally, with the sensitive spots smaller; prothorax nearly similar; elytra narrow and elongate-cuneiform (♂), or very broad, with more rounded sides (♀), very feebly subobliquely truncate at the tips, red-brown in color, with scarcely any maculation (♂), or with three nubilously paler bands and basal area (♀), the two medial uniting on the suture. Length (♂) 11.0, (♀) 13.5 mm.; width (♂) 3.9, (♀) 4.7 mm. Kansas.

The male sexual modification of the fifth ventral is nearly as in *confluens*, except that the very deep pit is shorter, not extending behind the middle, more abruptly ending and with similarly elevated side walls posteriorly. It differs from *confluens* in color, in the greater sexual disparity in size and outline and notably in the more incrassate distal part of the antennæ in both sexes.

In nearly all collections *velutinus* is represented by a rather heterogeneous lot of material, and I have made an attempt, recorded below, as far as my own is concerned, to segregate the specimens into what appear to be distinct species; they differ among themselves quite evidently in the form of the elytral apices, extent of the antennal sensitive spaces, degree and extent of maculation, sculpture of the prothorax and other features and may be known as follows:

Elytral apices feebly oblique, acutely bidenticulate, the outer tooth not much prolonged; form moderately stout, convex, black, the elytra, abdomen and legs red-brown, the tarsi infuscate apically, the four paler elytral fasciæ nearly always distinct and well developed though interrupted medially; head very finely, closely punctulate, with coarse punctures intermingled basally; antennæ black, moderately slender, only very feebly serrulate and not incrassate distally; prothorax campanulate, convex, with distinct and evenly distributed punctures, mingled with some coarse punctures on the flanks posteriorly, the vestiture coarse, golden, decumbent and close but not dense, except in the apical and basal constrictions; elytra rapidly cuneiform (♂), or feebly so and less rectilinear at the sides (♀), finely, not densely but strongly punctulate, the hairs stiff, short, fuscous or pale according to the ground tint; male with the fifth ventral canalicularly and distinctly impressed distally, elongate, rounded at tip, the abdomen gradually deflexed apically. Length (♂ ♀) 10.0–12.0 mm.; width 3.0–4.4 mm. Massachusetts, Pennsylvania, Kansas and Wisconsin (Bayfield). Very abundant.

velutinus Oliv.

Elytral apices narrower and extremely oblique, the outer angle much prolonged and very acute; elytral maculation always less developed. 2

2—Prothorax evenly campanulate, nearly as in *velutinus* but narrower; body narrower and more elongate, similar in coloration, except that the tarsi are almost wholly black; pubescence nearly similar; head nearly similar, the deep black antennæ longer, being four-fifths as long as the body (♂), much more strongly serrate distally and with the sensitive areas more oval and less linear; prothorax finely punctate, with coarser punctures intermingled throughout, giving a more fasciculate appearance to the pubescence, very coarse throughout on the flanks; elytra narrower, strongly cuneiform, with the paler fasciæ almost always feeble, the second invariably wanting, sometimes without trace of maculation, except the small subapical spot, which is the most constant of all; punctuation nearly similar, the short stiff pubescence always paler and fulvous; male with the fifth ventral never having more than a trace of apical impression. Length (♂ ♀) 9.8–11.8 mm.; width 2.9–3.9 mm. Massachusetts, New Jersey and Pennsylvania. Abundant. . . . . **acuticauda** n. sp.

Prothorax inflated anteriorly, being there about as wide as it is just before the basal angles and rapidly narrowing to the apical constriction; coloration and vestiture as in the preceding; head similar but larger, the eyes more widely separated; antennæ similar but with the sensitive areas less defined and not paler in color or silvery; prothorax larger and more elongate, sculptured and clothed nearly as in *acuticauda;* elytra similar and strongly cuneiform but much less distinctly exceeding the prothorax in width, uniformly darker red-brown, without trace of maculation at any part in the type, the sculpture and vestiture similar; fifth male ventral nearly as in *acuticauda.* Length (♂) 11.8 mm.; width 3.6 mm. A single example, without indication of locality, from the Levette collection.

thoracicus n. sp.

The larger head and prothorax, the latter more elongate and more parallel, owing to the anterior inflation, impart to the type of *thoracicus* a very different appearance from any other of the numerous examples of *velutinus* and *acuticauda* at hand, although this may not be apparent from the description.

Ophistomis Thoms.

Strangalia Lec. nec Serv.; *Strangalina* Auriv. (pars).

On comparing a typical *Ophistomis* from Brazil, *fulvicornis* Bates, received from that author, with our North American series, I can find no decided difference and conclude that our species should be recorded under that name, rather than *Strangalina* Auriv., even though the European type of the latter should be generically the same as ours.* The hind tarsi are missing in the example of *fulvicornis* referred to, but I have no doubt that the third joint is slender and cylindric in form. This notably slender, cylindric, apically feebly emarginate form of the third hind tarsal joint, distinguishes our species from *Leptura* and *Acmæops* and serves also as one of the characters separating them from *Bellamira*, where the third joint is broad and truly bilobed, besides the biconstricted prothorax of the latter genus. The minute fourth joint at the base of what is really the fifth, is often very distinct. The antennal poriferous depressions become somewhat more inconstant here than in *Typocerus*, these being very deep and acutely defined in *texana*, very shallow though evident in *sexnotata* and obsolete in the female of *montana* and very minute in the male—three species otherwise evidently allied. *Montana* is not by any means a variety of *sexnotata*, having pale incrassate antennæ. The following are new forms more or less recently received, which can be interpolated readily in the table of LeConte (Sm. Misc. Coll., 264, p. 211); the first two are related to *sexnotata* Hald., but have pale antennæ, not, however, incrassate and compact distally as they are in *montana*.

*Some of the Mexican species figured by Bates, such as *picticornis*, *belti*, *histrio*, *lachrymans*, *felix* and *saltator*, are faithful reproductions, in general habitus, of our northern species of the usual *virilis* and *luteicornis* type, but others, such as *nigrella*, *fulveola* and *pallida*, will necessitate at least another genus, the peculiarly attenuated, laterally sinuate form of the elytra, not possessed by these latter species, being one of the generic peculiarities of *Ophistomis*.

Ophistomis texana n. sp.—Form and ornamentation as in *sexnotata*, but with finer and closer thoracic sculpture, the elytral punctures also somewhat less coarse; head nearly similar; antennæ rather more slender and elongate and not deep black but always pale in color throughout, not infuscate or stouter distally as they are in *montana*, the poriferous spaces of the last four joints (♂) oval, only slightly elongate, deep and sharply defined, minute on the preceding joint, or (♀) very much smaller, deep though less acutely defined; prothorax longer than wide, closely, moderately strongly sculptured and immaculate; elytra as in *sexnotata*, the sutural angle at apex being wholly obliterated, the sutural edge evenly rounding outwardly to the very acute tip; male with the terminal impression of the slender pale last ventral deep and large, rounded; legs very slender. Length—to tips of elytra (♂ ♀) 10.0–12.0 mm.; width 2.5–3.0 mm. Texas (locality unrecorded).

In the male of *sexnotata*, the terminal impression of the last ventral is much smaller and feebler and the poriferous spaces of the outer antennal joints are longer, being a little less than half as long as the joints, very shallow and not so sharply defined as in *texana*. The elytral maculation is sharply defined and deep black in the female, but is faded out more or less in the male, a character not noted in *sexnotata* or the following:

Ophistomis evanescens n. sp.—Nearly similar to the preceding in sculpture and coloration but rather more slender, the prothorax, especially, being narrower and much longer than wide, differing particularly in the antennæ, which have the first five joints dusky testaceous, sparsely and inconspicuously pubescent, the remainder abruptly pale flavate throughout and with the short vestiture coarse, dense, very pale and notably different and also differing in having the fifth male ventral less elongate, more convex and with the terminal impression almost completely obsolete; elytral markings deep black in the male and as in *sexnotata*, the acute apices also as in that species and *texana;* legs pale throughout as in *texana* and not bicolored as they are in *sexnotata;* tarsi piceous-black distally. Length (♂) 9.5 mm.; width 2.4 mm. Texas (Harris Co.).

In the male of *texana* the last dorsal segment is a little wider and has the sides feebly arcuate, while in *evanescens* this segment, though similarly pale in color, has the sides feebly converging and straight; in both, there is a very small supplementary segment behind the segment referred to, which in *texana* is more strongly rounded at tip than in *evanescens*.

The three following species are allied to *luteicornis*, having the elytral apices obliquely truncate and with evident sutural angles but without the swollen male abdominal apex of *virilis* and *famelica:*

Ophistomis eversa n. sp.—Form, coloration and sculpture nearly as in *luteicornis*, except that the elytra are slightly more abbreviated, dehiscent at apex through a greater extent and without the black suture, the post-basal spots but rarely transversely united and, so far as known, only in the female and the black humeral spot not extending to the scutellum, the pronotal black vittæ similar but without more than a trace of the two large approximate occipital black spots of that species, the legs long, very slender, pale throughout, except the black apex of the hind femora—also as in *luteicornis;* head and antennæ (♂) nearly similar, except that the sensitive areas of the sides of the outer joints are less extended, the elongate apical and small basal areas of each joint widely separated whereas in *luteicornis* these areas are larger and very approximate. Length (♂ ♀) 9.0–11.0 mm.; width 2.2–2.8 mm. Illinois. Four examples.

The male channel-like concavity of the last ventral is as in *luteicornis*. The external sinuous outline of the posterior part of the elytra is more pronounced than in that species, but, having in mind the general mutual resemblance, especially in the peculiar coloration of the legs, it is quite possible that *eversa* should not have higher rank than a subspecies. In *eversa* the elytral spots are rounded within and but rarely attain the suture, the latter being almost universally the case in *luteicornis;* the latter species is represented in my collection by a large series from Pennsylvania.

Ophistomis carolinæ n. sp.—General organization and fine close sculpture as in *luteicornis*, but stouter and with the long slender legs pale throughout; head differing greatly in having the eyes smaller and the very retracted tempora behind them more evident, tumid and less oblique; antennæ very slender, piceous-black throughout, the feeble sensitive areas of the outer joints narrow, not occupying more than apical half, the basal areolæ of the preceding extremely small, feeble and obsolescent; two black occipital spots of *luteicornis* well developed; prothorax as in that species, except that the two discal vittæ are very fine; elytra broader, less curved or dehiscent apically, pale throughout, except a rounded sub-median discal spot and a feeble cloud at apical fourth, the sutural bead black only basally; male having the apical concavity of the last ventral much shorter, prolonged anteriorly to near the base by a narrower and still feebler evanescent impression. Length (♂) 10.5 mm.; width 2.6 mm. South Carolina.

This is without doubt specifically distinct from *luteicornis;* it differs in coloration of the elytra, legs and antennæ, as well as in the stouter form, larger tempora and in the male ventral characters. In *luteicornis* and *eversa* the entire under surface is pale, while in *carolinæ* the under surface is wholly deep black, except the abdomen, which is bright red.

Ophistomis ochreipennis n. sp.—Much shorter in form than *luteicornis*, the fine sculpture nearly similar but much less dense on the prothorax, pale ferruginous, the basal part of the head broadly black from eye to eye; prothorax (♂) bivittate with black as in that species, without trace of vittæ (♀); elytra pale ferruginous throughout, except the sutural and external entire black beading and a nubilous fuscous indefinite area near apical fourth; anterior legs pale, with piceous tarsi, the intermediate with nubilously black femoral and tibial apices and wholly deep black tarsi, the posterior black, the tibiæ gradually pale basally and the femora pale, with blackish apex; head as in *luteicornis*, except that the eyes are not so developed, the tempora larger, though similarly very oblique and arcuate; antennæ very slender, deep black throughout, the sensitive areas as in *eversa;* prothorax formed nearly as in that species; elytra notably short, barely two and one-half times as long as the prothorax (♂) and less than three times as long (♀), very narrow, sinuous and everted distally as in *eversa;* abdomen wholly deep black above and beneath throughout, the concavity of the last ventral (♂) much more extended than in *luteicornis* or *eversa*, extending, decreasingly though deeply, to the extreme base; female larger and stouter than the male, the black abdomen becoming faintly refuscent at apex above and beneath. Length (♂ ♀) 9.5–11.5 mm.; width 2.4–3.2 mm. Unlabeled in the Levette collection.

This species is widely distinct from *luteicornis* or any of the preceding, though belonging to the same group; its habitat is unfortunately not known, but perhaps may be Colorado, Indiana or Florida in order of likelihood. The following is closely allied to *bicolor*, of which it may possibly prove to be rather a geographic subspecies than a distinct species:

Ophistomis simulans n. sp.—Coloration and sculpture, male sexual characters and general habitus throughout almost exactly as in *bicolor*, but it differs in its relatively broader and much less elongate elytra, the outer apical angle of which is much less prolonged and less acute, also in having the two sensitive areas of the outer male antennal joints virtually contiguous, whereas in *bicolor* they are well separated throughout on the somewhat more elongate outer joints. Length (♂ ♀) 10.3–11.3 mm.; width 2.3–2.5 mm. Colorado. Levette collection.

Placed side by side, the two series of examples, six of *bicolor* and four of *simulans*, can be observed to differ decidedly in form and size, but that is all that can be said conclusively at present, except in regard to the antennal characters mentioned.

Subfamily LAMIINÆ.

The transition from the preceding groups to such compact bulky forms as many of the Lamiids, is too abrupt and it would be better to have the Clytini form the pre-Lamiid group of the Cerambycinæ.

In fact, some of the forms placed near the head of the Lamiinæ by LeConte and Horn, such as *Cyrtinus* and *Psenocerus* might better be transferred to the Clytini, where the type species were originally placed by Haldeman and Say respectively. The species described by the writer as *Psenocerus tristis*, afterwards suppressed by Hamilton, is by no means the same as *supernotatus* or even a subspecies; it is abundantly distinct in outline, structure and habitus and should be rehabilitated. There is another species of the genus in my collection from Tamaulipas, Mex.

Tribe DORCADIONINI.

Ipochus Lec.

This is one of the very few American types representing the extremely numerous and diversified *Dorcadion* and *Parmena* of the old world; it is a very local development, confined to the coast regions of southern California and is moderately rich in species; it is allied very closely to *Parmena*, differing almost solely in the absence of lateral thoracic prominences; the type of elytral vestiture seems to be the same in both. The species in my cabinet may be recognized as follows:

Elytral punctures simple; last ventral segment of the male broadly arcuato-truncate and simple at apex.....2
Elytral punctures more or less evidently asperate; last ventral strongly margined medially at apex in the male.....7
2—Prostrate hairs of the elytra long and usually denser.....3
Prostrate hairs very much shorter and generally distinctly sparser....4
3—Fasciæ of the elytra white, narrow; vestiture of the prothorax not conspicuously dense, having the four small clusters of white hairs very distinct; body rather narrow, very convex, the elytral humeri moderately impressed; antennæ as long as the body; erect hairs very numerous, white and blackish intermingled. Length (♂) 6.5 mm.; width 2.1 mm. California (near San Diego),—Ricksecker. **hispidus** n. sp.
Fasciæ yellowish, the posterior very broad, equalling nearly half the elytral length, its anterior limit sharply biserrate, the subbasal fascia narrow; vestiture of the prothorax very dense, pale brown and conspicuous, the four pale points evident; antennæ (♀) nearly as long as the body, gradually and feebly tapering; erect hairs relatively less abundant than in the preceding; prothorax decidedly transverse, not as wide at base as at apex. Length (♀) 8.0 mm.; width 3.3 mm. California (near San Diego),—Dunn.....**pubescens** Csy.
4—Prothorax (♀) rather strongly transverse, somewhat hexagonal, the sides being very broadly angulate medially; body piceous in color,

small, unusually abbreviated and with the two elytral fasciæ much less widely separated, this distance on the suture being less than half the elytral length; the fasciæ are yellowish in color; antennæ fully as long as the body; erect hairs long and numerous; elytral humeri barely at all impressed. Length (♀) 4.7 mm.; width 1.8 mm. California (without further indication of locality)....**parvulus** n. sp.

Prothorax (♀) but slightly or not wider than long, rounded at the sides, the latter thence more converging and straighter to the base than to the apex.....5

5—Prothorax (♂) as long as wide, globular; size very small, narrow, rather densely dusky-pubescent throughout, except the small pronotal points and very narrow imperfect elytral fasciæ, which are whitish, the erect hairs long and abundant, those of the elytra a third as long as the width of the latter; antennæ (♂) rather stout, not longer than the body; elytral humeri barely impressed, with the coarse punctures confined to a subbasal transverse series. Length (♂) 5.0 mm.; width 1.4 mm. California (Los Angeles Co.).

globicollis n. sp.

Prothorax (♂) not quite as long as wide and not so nearly globular, being more broadly truncate at apex.....6

6—Prothorax uniformly punctured throughout, legs stout, the hind femora (♀) not quite twice as long as the tarsi; male slender, with the prothorax slightly wider than the elytra; female larger and very much stouter, with the prothorax narrower than the elytra; antennæ differing scarcely at all sexually, though relatively a little longer in the male; minute punctulation of the elytral ground dense, the larger punctures notably coarse in both sexes; humeri rather feebly impressed. Length (♂ ♀) 6.3–7.8 mm.; width 2.0–3.3 mm. California (Los Angeles Co.).....**subnitidus** Csy.

Prothorax less evenly punctured, less closely so medially; minute punctulation of the elytra much less dense and still more minute than in *subnitidus*, the elytra shorter and with the punctures notably smaller and still sparser, the surface more shining, the white fasciæ distinct though rather narrow and entire, biarcuate; humeri deeply and conspicuously impressed; legs nearly similar. Length (♂ ♀) 5.7–7.0 mm.; width 2.2–2.8 mm. California (near San Diego),—Ricksecker; also taken by the writer at San Diego.....**fasciatus** Lec.

7—Elytral punctures feebly asperate; body of the usual form and color, narrow in the male but with the prothorax scarcely as wide as the elytra, dark piceous, rather shining, the prostrate vestiture very short, the larger punctures sparse, coarse on the prothorax, much smaller on the elytra, the humeri feebly impressed; antennæ as long as the body, feebly tapering; pronotal fascicules distinct, the elytral fasciæ narrow and unusually approximate, being separated by less than half the elytral length, the anterior less basal than usual. Length (♂) 5.2–6.0 mm.; width 1.7–2.0 mm. California (Monterey). Shaken from the Monterey Pine by the writer.

pinicola n. sp.

Elytral punctures rather coarser and very strongly asperate throughout; body moderately stout, similar in color; prothorax (♀) equal in

width to the elytra, distinctly transverse, rounded and inflated at the sides before the middle, coarsely, sparsely punctate, the punctures granuliferous, the four spots large, yellow, somewhat diffused, the elytral fasciæ narrow, rather diffused, yellowish, the humeri not in the least impressed; antennæ (♀) fully as long as the body; depressed pubescence throughout the body short, not at all dense or conspicuous, the surface shining. Length (♀) 6.8 mm.; width 2.6 mm. California (Island of Santa Catalina),—Fall...**catalinæ** n. sp.

There is a general similarity of habitus, form and color pervading all the modifications of *Ipochus* above noted, so that they have been neglected hitherto and all considered as *fasciatus* Lec., without any sort of discriminative investigation so far as recorded. A closer study reveals considerable diversity however, and I have but little doubt of the validity of the species named in the table. They are generally arboreal in habits and not epigeal as stated by LeConte and Horn.

It is probable that the Mexican *Parmena villosa* of Bates, is closely allied to *Ipochus*, but the sculpture of the body seems to be different.

Moneilema Say.

Monilema Lec. et Horn.

The species of this genus are numerous though frequently closely allied, and they are but slightly diversified in structural characters as a rule; there are probably fifty or more represented in cabinets, but only very few, having more salient and striking distinctive features, have been described. Those present in my collection may be defined as follows:*

Subgenus **Moneilema** in sp.

First antennal joint acute externally at apex; basal joint of the hind tarsi more elongate; anterior parts smaller when compared with the hind body.

Antennal joints three to five or six annulate with white pubescence....2
Antennal joint four alone annulate with white; body much larger; prothorax without trace of lateral tubercle.....5
2—Pronotum barely at all punctured except near the base.....3

* I have followed Say in giving the specific names the feminine ending, harmonizing with the general rule for Latin words of whatever derivation ending in *a*, and as observed in *Lema* of the Chrysomelidæ. The recorded measurements of length extend only to the tips of the elytra.

Pronotum equally but very sparsely and irregularly punctured throughout 4

3—Form stouter, the elytra barely at all narrower at base than near the middle, black, glabrous, the prothorax sometimes dusky rufous; annulation of the antennæ moderately marked; prothorax rather strongly transverse, the lateral tubercle short and very broad though angulate; elytra only about one-half longer than wide, narrowed behind, moderately obtuse at apex, the surface with large irregular anastomosing furrows and coarse sparse punctures, denser and rougher on the inflexed sides basally and all obsolescent apically. Length (♂ ♀) 14.0–18.5 mm.; width 5.8–8.2 mm. Kansas. . . **annulata** Say

Form more slender, with relatively smaller anterior parts and more inflated and convex hind body, deeper black throughout, not glabrous, the elytra with very minute ashy hairs, which are condensed in a broad lateral streak from the middle to the apex, the exposed tip of the last dorsal segment (♂) also densely clothed with ashy pubescence, which becomes very minute and sparser (♀); antennæ with the ashy annuli very conspicuous; prothorax but little wider than long, the lateral tubercle small, obtusely pointed; elytra inflated medially, more strongly narrowed posteriorly to the still more narrowly obtuse apex, distinctly narrower at base than at the middle; surface shining, obtusely corrugated in wavy lines, the punctures large but feeble, sparse, much stronger, dense and asperate on the basal parts of the inflexed flanks; tarsi more slender than in any other species, also shorter than in the preceding. Length (♂ ♀) 13.5–15.5 mm.; width 5.8–7.0 mm. Kansas (Hamilton Co.) and Colorado. **nubecula** n. sp.

A—Form, coloration and lustre as in *nubecula*, the rugæ of the elytra more obsolete and the punctures of the inflexed flanks larger and less asperate, the small ashy hairs of the elytra only visible in the depressions in the type, the last dorsal (♂) with the hairs, though dense, much more minute and less conspicuous; antennæ apparently much more obscurely annulate; last ventral segment (♂) more broadly sinuate at tip. Length (♂) 13.8 mm.; width 6.0 mm. Kansas (locality unrecorded) . . . . . **demissa** n. subsp.

4—Body more elongate than in the preceding and forming part properly the following group, deep black, alutaceous, shining, glabrous at the sides and beneath as in all the following species; antennal joints three to six annulate but imperfectly on the fifth and sixth; prothorax very nearly as long as wide, subinflated at the sides near the apex and very slightly wider there than at base, the sides feebly and broadly undulated, without trace of tubercle; scutellum broadly triangular, very minutely, evenly punctulate and with very fine decumbent hairs; elytra four-fifths longer than wide, evenly oval, convex, the sides slightly prominent basally; surface with a peculiar system of fine and rapidly waving, feeble impressed lines and, to slightly behind the middle, with rather small but deep and perforate sparse punctures, which, on the flanks basally, become very coarse, dense and asperulate; male with the fifth ventral rufescent, broadly

but rather strongly sinuate at tip. Length (♂) 17.2 mm.; width 6.7 mm. New Mexico (Luna).....**cylindricollis** n. sp.

5—Punctures of the basal part of the inflexed elytral flanks large, rather close-set and very strongly graniferous; body very elongate, deep black, shining, entire front finely and rather closely but unevenly punctate; antennæ less than three-fifths as long as the body, the annulus of the fourth joint very sharply defined, not attaining the base; prothorax nearly as in *cylindricollis*, except that there are very few fine, irregularly dispersed punctures, these a little larger and somewhat more numerous basally but of the same character as the others; elytra rather more than twice as long as wide, smooth, oval, more pointed behind, convex but with the upper limit of the flanks very sharply defined nearly to the middle; surface smooth but with faint vestiges of rapidly wavy longitudinal lines laterally, the punctures fine and sparse, not extending to the middle; last dorsal red; fifth ventral (♂) rufescent at tip, broadly, distinctly sinuate; femora (♂) unusually rapidly and very strongly clavate apically. Length (♂) 23.0 mm.; width 9.0 mm. Arizona (Douglas),—Snow. **microsticta** n. sp.

Punctures of the basal parts of the inflexed elytral flanks coarse but sparse and not graniferous.....6

6—Elytra very moderately convex, widest distinctly before the middle, thence gradually narrowing posteriorly, the sides arcuate throughout; body stout, piceous-black, rather large, shining; front with fine scattered punctures laterally; antennæ (♂) half as long as the body; prothorax larger than usual, slightly wider than long, the sides parallel and straight, converging slightly near apex and base; punctures very fine and extremely sparse, larger and more numerous near the base, perforate; elytra abruptly declivous along a prominent though blunt line to rather behind the middle, two-thirds longer than wide, smooth, with faint longitudinal inequalities, the punctures small and scattered in basal two-fifths; femora (♂) very much inflated, the fifth ventral rufescent, broadly. distinctly sinuate, with a broad and flat marginal bead; last dorsal red. Length (♂) 25.0 mm.; width 10.8 mm. Western Texas.....**appressa** Lec.

Elytra strongly convex, the delimiting line of the flanks much less prominent, broadly rounded in transverse section as a rule, almost evenly elliptic in outline and widest at about the middle; size smaller and narrower; elytra with shallow and wavy, approximate furrows, the body black to piceous-black, the last dorsal red throughout; lustre subopaque or slightly shining; front with a very few fine punctures near the sides; antennæ two-thirds as long as the body; prothorax nearly as long as wide, much smaller than in *appressa*, the sides undulated, subconstricted near the base; punctures very fine and extremely few in number even near the base, where they are but slightly less minute; elytra twice as long as wide, the punctures fine and very sparse, only present in basal fourth, the flanks not less opaque and with the moderately large punctures sparse even basally, the line of flexure broadly convex (♀), more sharply defined (♂); femora much inflated distally (♂) and rather stouter than usual

in the female. Length (♂ ♀) 20.0–23.5 mm.; width 8.0–9.3 mm. Arizona (probably southern),—Levette..... **corrugans** n. sp.

A—Nearly as in *corrugans* but smaller and with less elongate hind body, this being (♂) three-fourths longer than wide, black, densely alutaceous; prothorax similarly small but with the stronger punctures near the base much larger; elytra more obtuse at apex, similar in sculpture, the last dorsal not red but black, rufescent at the apical margin; fifth ventral more narrowly sinuate at tip, the femora less strongly inflated than in the male of *corrugans*. Length (♂) 18.0 mm.; width 7.8 mm. Arizona (probably southern),—Levette..... **ovipennis** n. subsp.

In *corrugans* the form is much narrower and more convex than in *appressa*, but the longitudinal corrugations of the elytra are occasionally obsolete, the surface becoming smooth. *Ovipennis* is probably rather a species than a subspecies, the habitus being evidently different.

Subgenus **Collapteryx** Newm.

First antennal joint not mucronate at tip; basal joint of the hind tarsi shorter, though longer than wide as a rule; anterior parts relatively more developed.

Prothorax with a spiniform projection at each side just behind the middle; fourth antennal joint alone annulated.....2

Prothorax not spinose but with a feeble tubercle at each side, which is sometimes almost wholly obsolete; antennæ generally as in the preceding.....8

2—The lateral spine well developed, very acute and projecting more or less upward and backward; body larger.....3

The lateral spine very short, sometimes but little more than a tubercle, though always distinguishable as a spine.....7

3—Annulus of the fourth antennal joint broad, extending from the base to about the middle.....4

Annulus of the fourth joint short, not extending to the base.....5

4—Body more slender than usual and with much smaller and less developed anterior parts, shining; antennæ gradually tapering, clothed densely with gray decumbent pubescence and fully two-thirds as long as the body; prothorax nearly as long as wide, not three-fifths as wide as the elytra, distinctly constricted just behind the spine, having widely scattered coarse and smaller punctures, which basally, become very coarse and rather close; elytra not quite twice as long as wide, moderately convex, the lateral line of flexure prominent and rather acute; punctures coarse, few in number, arranged in very irregular series, in basal third suturally, to the middle laterally, the deflexed flanks with coarse sparse asperate punctures in nearly basal half; abdomen shining, the minute decumbent hairs close

and evident, the fifth segment (♂) with the feeble apical sinus narrower than usual, about a third as wide as the base; femora with the minute punctulation feeble and not dense. Length (♂) 22.0 mm.; width 8.4 mm. Arizona (locality unrecorded).

constricta n. sp.

Body more parallel, the anterior parts more developed, the surface less polished; antennæ fully three-fourths as long as the body, the dense pubescence pale chocolate-brown; prothorax fully three-fourths as wide as the elytra in the male, more transverse than in the preceding and not subbasally constricted, nearly similarly and coarsely, deeply punctate but with the minute close punctulation stronger; scutellum sharply triangular, with rather distinct pubescence, which is parted along the middle, much more acutely angulate and less transverse than in *constricta;* elytra oblong-oval, nearly twice as long as wide, convex, the line of flexure much more obtuse than in the preceding, the punctures coarse, sparse, extending behind the middle both suturally and externally, those on the flanks not differing but those along the line of flexure crowded and rugose basally; fifth ventral (♂) very much broader at apex, the barely at all sinuate truncature more than half as wide as the base; femora with the minute punctulation very strong, dense and conspicuous. Length (♂) 24.0 mm.; width 9.3 mm. Utah (locality unrecorded) ..... **uteana** n. sp.

5—Spine at each side of the prothorax subhorizontal, though slightly oblique as usual, unusually long, slender and subparallel, one-fourth as long as the thoracic length; surface very shining; antennæ gradually tapering as usual, the minute dense vestiture plumbeous-bluish; prothorax nearly as long as wide, having rather small and widely scattered punctures, with some coarser intermingled anteriorly and close and very coarse near the basal margin; elytra convex, oval, very broadly obtuse at apex, the coarse punctures very sparse, irregularly subserial to somewhat behind the middle, coarse and asperate on the flanks and rather closer there basally than above; lateral line of flexure obtuse, coarsely, closely punctate; punctulation of the shining femora fine, not dense, with some fine punctures rather sparsely intermingled and several coarser and very remote; hairs on the strongly and closely punctulate abdomen gray and extremely minute, scarcely visible. Length (♀) 26.5 mm.; width 10.4 mm. Arizona (Tucson),—Snow ..... **pimalis** n. sp.

Spine at the sides of the prothorax shorter, rapidly acuminate and extending more upward in obliquity, not more than a fifth or sixth as long as the thoracic length 6

6—Prothorax but slightly wider than long and much narrower than the elytra in the male, relatively smaller (♀); surface shining; antennæ fully two-thirds as long as the body, with dark grayish vestiture, the four basal joints stout, those beyond abruptly much more slender; prothorax with very few small or moderate punctures but with many very coarse punctures scattered near the base; scutellum notably pubescent, with broad glabrous line; elytra strongly convex, oval, nearly twice as long as wide, with moderately acute and distinct line of flexure basally, the punctures coarse, sparse, extending in

very irregular series to behind the middle, very sparse on the flanks; abdomen closely clothed with very small, decumbent but obvious brownish hairs, the sinuato-truncate apex of the fifth segment (♂) more than one-half as wide as the base; minute punctulation of the femora extremely fine and not conspicuous and bearing extremely minute hairs. Length (♂ ♀) 24.0–27.8 mm.; width 8.9–11.4 mm. Arizona (probably southern)..... **spinicollis** Csy.

Prothorax much larger, transverse, very nearly as wide as the elytra in the male; surface shining; antennæ stout, gradually and evenly tapering, the fifth joint not abruptly much narrower than the fourth, the dense hairs dark brown; prothorax punctured as in the preceding; elytra oblong, the sides parallel and barely arcuate, narrowing behind to the broadly obtuse apex, very convex, the line of flexure abrupt, rather acutely marked and coarsely punctate; punctures sparse, coarse, becoming more uniform basally, extending sublinearly to the middle, very coarse, numerous and graniferous basally on the flanks; punctures even coarser and more numerous throughout the thoracic flanks than in *spinicollis;* abdominal vestiture excessively minute, fine and scarcely discoverable, the sinuato-truncate apex of the fifth segment (♂) fully one-half as wide as the base; femora without discoverable hairs though minutely, strongly punctulate. Length (♂) 25.0 mm.; width 9.7 mm. Southern Arizona.

pollens n. sp.

7—Form rather stout, very shining, the legs faintly picescent; antennæ slender, two-thirds as long as the body, densely clothed with red-brown pubescence, without evident annulation of any kind in the type; prothorax slightly transverse, much narrower than the elytra, swollen at the sides near the apex, the spine small but acute and distinct; surface very minutely, not densely punctulate, with evenly distributed minute punctures everywhere intermingled, near the apex and toward base with rather coarse deep sparse and perforate punctures; elytra oval, rather more tapering behind to the obtuse apex, three-fourths longer than wide, moderately convex, with short interrupted flexuous and feebly impressed broad lines, and a few coarse punctures, not extending to the middle suturally, but more numerous and extending to apical fourth laterally, the line of flexure obtuse, the flanks with very coarse punctures and gradually coarser simple deep foveæ basally; broad even sinus of the fifth ventral (♂) half as wide as the base; femora very minutely, not densely punctulate, with very fine punctules everywhere intermingled. Length (♂) 21.0 mm.; width 8.0 mm. New Mexico.

simplicicornis n. sp.

A—Somewhat similar to the above but less lustrous, with more elongate-oval, much more convex elytra, nearly twice as long as wide, on which the line of flexure at the sides is almost completely obsolete, the surface with very fine and faint sinuous lines, impunctate except a few moderate and sparse punctures near the sides, those of the flanks scarcely half as large as in the preceding and very sparse; prothorax and antennæ similar, except that the former is much

smaller in the female type, in part due to sex; legs rufo-piceous. Length (♀) 21.5 mm.; width 8.0 mm. New Mexico.

grylliceps n. subsp.

Form more elongate and less ventricose, highly polished, the legs black and concolorous; antennæ similarly slender and apparently not at all annulate; prothorax distinctly shorter and rather strongly transverse, not swollen on the flanks subapically, the spine still smaller, more obtuse and more tuberculiform; sculpture nearly similar, except that the minute punctulation is much less close and the coarse punctures extend less far from the apical and basal margins; flanks coarsely punctured in apical half and near the base; scutellum broadly rounded, sparsely micro-punctulate; elytra narrower, more oblong, with feebly arcuate sides, feebly narrowing posteriorly to the relatively broader apex, about twice as long as wide, a fourth wider than the prothorax, very convex, the line of flexure notably obtuse; punctures very coarse, deep, numerous, extending nearly to apical third, not differing on the flanks, except that they become still coarser basally though simple, with the surface more irregular and extend, near the sides, almost to the elytral tips, the surface above smooth, without elongate impressions; under surface and legs nearly similar; female in every way as in the male but with the anterior parts less developed, the sides of the elytra more arcuate and, as usual, with the femora much less inflated. Length (♂♀) 19.5–20.5 mm.; width 7.2–7.8 mm. Colorado.....**rector** n. sp.

8—Antennæ smooth, never more than sparsely punctate, rather slender; upper surface of the body in great part smooth.....9

Antennæ coarsely and rugosely punctured, very stout, not annulate; body more or less rugose and punctured throughout.....12

9—Thoracic tubercles situated at basal third, erect and very distinct though obtuse at tip. Body broadly oblong-oval, convex, rather shining, deep black and glabrous; head sparsely punctate almost throughout; antennæ gradually tapering, not annulate, the fourth joint with merely a small white patch beneath at base in the type; prothorax strongly transverse, three-fourths as wide as the elytra, the sides slightly converging basally and apically from the tubercle; surface with scattered larger and smaller punctures and a rather even single line of coarse punctures near the base; scutellum very short and extremely transverse, puberulent, without broad median parting; elytra oblong-oval, nearly straight and parallel basally, rounding and rapidly narrowing posteriorly to the broadly obtuse apex, the line of flexure basally very obtuse, coarsely punctate; surface with feeble confused vermiculiform sculpture, the microgranulation dense and strong; punctures coarse, deep, wanting near the median line of each elytron nearly to the base, extending suturally and laterally nearly to the middle, very coarse and extremely deep, rather close and very conspicuous on the flanks; legs shorter than usual, the femora rugulose and evidently though not densely punctate. Length (♀) 23.0 mm.; width 9.6 mm. Mexico (Durango City),—Wickham.....***pleuralis** n. sp.

Thoracic tubercles behind the middle as usual but before basal third . . 10

10—Tubercles wholly vestigial, represented by feeble broad swelling of the surface, which is not at all acute. Body stout, subparallel, the prothorax very large, more than three-fourths as wide as the elytra (♂) and about as long as wide; antennæ very finely tapering, the fourth joint annulate with white in basal half or more; prothorax very convex, the median line striate for a short distance behind the centre, minutely, not densely, uniformly punctate, with an area of coarse punctures toward base and narrowly along the apex; elytra oblong, feebly narrowing behind to the extremely broad, arcuate apex, rather convex, one-half longer than wide, with many irregular anastomosing creases and some coarse punctures, numerous on and near the obtuse line of flexure to apical fourth, also in an irregular line near outer third and another, still broader, near inner fourth, from the base nearly to the middle, the flanks with numerous coarse asperulate punctures from base to behind the middle; hind femora peculiarly sculptured, having very minute, sparse and feeble punctulation, with rather sparse fine punctures intermingled to apical fourth, where, along a line which is advanced axially, the punctulation becomes abruptly much stronger and very dense; fifth ventral (♂) very broadly sinuato-truncate and strongly beaded at apex. Length (♂) 22.0–25.0 mm.; width 8.6–10.2 mm. Texas (El Paso),—Dunn.
solida n. sp.

Tubercles very small but acute and distinct 11

11—Form, coloration and lustre nearly as in *solida*, the antennæ similar, the prothorax similar in its subquadrate form and in sculpture but relatively a little smaller, much narrower than the elytra, the median line finely striate and with a large feeble indentation slightly behind the centre; scutellum differing considerably, being much less transverse and nearly equilatero-triangular; elytra narrower and more elongate, four-fifths longer than wide, more convex, smooth, the creases of the preceding not visible, except near the base, where they are more longitudinal; punctures coarse and rather close-set on and near the line of flexure to apical third, almost completely wanting elsewhere, except a single widely spaced line very near the suture for a short distance behind the scutellum; the lower part of the line of flexure is free from punctures and those of the flanks are coarse but everywhere widely separated, extending inferiorly to apical third; femora as in *solida*, the tarsi much shorter, with the basal joint much less elongate; fifth ventral (♂) still somewhat more broadly sinuate but more finely beaded at apex; female nearly similar to the male but more elongate, with relatively smaller prothorax and with the more slender femora evenly sculptured throughout. Length (♂ ♀) 22.0–24.5 mm.; width 9.2–9.7 mm. Texas (western).
femoralis n. sp.

Form much more slender, similarly shining but with the legs piceo-rufous; antennæ nearly similar, the annulus of the fourth joint shorter and less well marked; prothorax differing greatly in being much shorter and rather strongly transverse, the sculpture more obsolete, there being only a very few punctures near the apex and a single irregular line near the base, the small medial indentation being at basal

fourth; elytra nearly similar in form but still smoother, fully as convex, without creases or impressions of any sort and wholly without punctures, with exception of a sporadic one or two perhaps, except laterally near the obtusely prominent line of flexure in about basal half, where they are moderately coarse and very sparse, the punctures of the flanks few in number and only moderately coarse; legs more slender, the tarsi much narrower. Length (♀) 19.0–21.5 mm.; width 7.7–8.7 mm. New Mexico.....**lævigata** Bland

12—Moderately slender, very convex, more or less opaque above, more shining on the flanks and beneath; antennæ unusually short, very stout basally, rapidly tapering and without evident annulation; prothorax nearly as long as wide, slightly more narrowed at base than apex, the sides at the usual position of the tubercle slightly angulate but only obtusely prominent, the surface opaque, rugulose, finely punctate, gradually coarsely so basally, transversely plicate near the anterior margin, coarsely punctato-rugose throughout the less opaque flanks; elytra evenly oval, less than twice as long as wide, strongly convex, one-half wider than the prothorax, smoothly undulato-rugose throughout, feebly shining, and with moderately coarse, deep punctures, sparsely placed in the bottoms of the undulations from base to apical fourth, and, near the sides, very nearly to the tip, closer and still more asperate on the flanks, the surface more deeply rugose along and near the very obtuse line of flexure; abdomen more shining than the upper surface and with coarse, deep and well separated punctures, equally distributed over the entire surface, the fifth ventral (♂) broadly sinuate at tip; legs rather shining but rugulose, the very distinct punctures well separated and only moderately coarse, the minute punctulation equal and not dense throughout on the femora. Length (♂) 18.0 mm.; width 7.7 mm. A single male without indication of locality..**opaca** n. sp.

Opaca has long been in my collection under the name *subrugosa* Bland, but it does not agree with the description of that species, which is from Cape San Lucas. In *subrugosa*, for example, the fourth antennal joint is annulate with white, of which there is no trace in the well preserved type of *opaca*, and again, the coarse punctures near the base of the pronotum are not broadly "diffused" but confined to an irregular transverse line; finally, the abdomen in *subrugosa* is said to be finely punctured, more sparsely toward the sides. It is possible that *opaca* may inhabit some part of the Lower California Peninsula, but there is no record. *Solida* and *femoralis* are allied to *lævigata* but are of much heavier build, with larger and much more elongate prothorax. The type of *grylliceps*—the head throughout the genus, with its high vertical front, recalls strikingly the form of that part in the crickets and grasshoppers—has, on each

elytron, two very fine and subobsolete though rather sharply marked longitudinal raised threads.

Simplicicornis and *rector* are perhaps allied to *armata* Lec., and generally figure among the representatives of that species in collections; but, on consulting the original description of the type of *armata*, which was found by the Mexican Boundary Survey, it is evident that they cannot be identical with LeConte's species. The species just mentioned have the lateral thoracic spines so small as to be little more than acute tubercles and could never, in my opinion, have given rise to such a name as *armata;* they are also very much smaller in size, *armata*, in fact, being one of the largest species of the genus (1.25 inch or 31.2 mm). It is probable that the original type of *armata* has never been duplicated, and that the species is allied rather with the *gigas* group, but having more rugulose elytra. The species from *constricta* to *pollens* in the table, are allied more especially to *gigas* Lec., but are all materially smaller; furthermore in only one, *pimalis*, do the thoracic spines approach the development that they have in *gigas*, and in *pimalis* they are much more slender. The length of *gigas*, as given in the original description, is 37 mm. G. H. Horn (Trans. Am. Ent. Soc., 1885, p. 185) gives the length of *gigas* as somewhat less, that is 30–34 mm., all of which measurements are materially greater than any pertaining to the species of the group named above, which range from 22 to about 28 mm. Individuals of the same species do not vary so greatly in size in this genus.

The two subgeneric divisions adopted above on the recommendation of Dr. Horn (l. c.), are quite distinct in habitus, as may be observed very readily on segregating the groups, and possibly it would be better to give them generic rank, but there are no very sharply marked differences in the tarsi; in *solida*, for instance, the first joint of the posterior is nearly as long as the next two combined, but in the rather closely allied *femoralis* it is very much shorter, being only a little longer than wide; they are however always thicker in *Collapteryx* than *Moneilema* proper. The pads of dense pubescence on the soles of the tarsi offer comparatively little diversity of form or extent in the species here defined, and so no use has been made of a character that may, in certain aberrant forms such as *fortis* Lec., become very conspicuous.

The femora of the male are always much stouter than those of the female and strongly claviform, and the abdomen protrudes more behind the elytra in the latter, which differs also from the male in its more elongate form of body and relatively smaller prothorax; but I have noticed no decided differences otherwise, either in structure or sculpture, in those cases where the two sexes come from the same source and undoubtedly pertain to the same species. The very remarkable bipartite sculpture of the male femora, described above under *solida* and *femoralis*, does not seem to affect any other species of the genus.

Tribe MONOCHAMINI.

Monochamus Serv.

The elytral apices are notably variable in this genus between rather wide limits, but, with series at hand, several sufficiently obvious groups may be defined as below. In *scutellatus*, for example, the tips are never dentiform, but they vary from an acutely defined right angle at the suture to an even and rather broad arcuation; in *obtusus* all the examples at hand have the sutural angle well rounded, without trace of prominence; in *maculosus*, *oregonensis* and some others, there is, normally, an obtuse sutural prolongation, which may however be lost in certain individuals. The antennal joints in large males sometimes seem to be proportionally longer than in small examples, and there is considerable sculptural variability; for example in *notatus* Drury (*confusor* Kirby), the elytral punctures are well separated and not notably graniform, but, in one specimen before me from the Adirondacks, these become very strong and so dense as to produce a rugose aspect; much latitude for individual variation, therefore, has to be allowed, but notwithstanding this, the number of true species admitted by Dr. Horn is too small by several. Those which seem entitled to the specific status may be defined as follows:

Elytra with the sutural angle prolonged in a slender spine; body large, parallel (♀) or with cuneiform hind body (♂); color pale chocolate-brown, mottled with darker brown and white, especially dark near the base, laterally before the middle and in spots thence to the tip, a broken oblique white lateral fascia at basal fourth, another sometimes at the middle and a third always visible near apical fourth especially noticeable; punctures toward the humeri becoming moder-

ately dense and granuliform. Length (♂ ♀) 25.5–27.5 mm.; width 7.8–8.1 mm. Eastern North America as far south as Florida. **titillator** Fabr.

Elytra rounded at the apices, with a slender spine projecting posteriorly from the arcuation and not in prolongation of the suture. Body very much smaller and more slender than in the preceding; coloration and maculation nearly similar, the elytral punctures in long irregular series and with the two obtusely raised lines of each elytron much more evident, the punctures toward the humeri as sparse as elsewhere and not, or scarcely at all, graniferous; prothorax very nearly as long as wide, the lateral tooth short and right angled, the central elevation strong; antennæ very slender, one-half longer than the body in the male; legs nearly similar but more slender. Length (♂) 18.5 mm.; width 5.1 mm. Texas..... **angusticollis** n. sp.

Elytra conjointly and broadly rounded at apex, each with an obtusely dentiform and more or less feeble sutural prolongation.....2

Elytra conjointly and broadly rounded at tip, the sutural angles never dentiform and in all but extreme cases notably rounded.....3

Elytra each obliquely prolonged apically and rather acute at apex; elytral maculation in large, solid and well defined masses.....4

2—Elytra in color and maculation almost exactly as in *titillator*, except that the two brown sublateral spots near basal third form a much more oblique line; sculpture differing conspicuously, the punctures toward the humeri becoming densely crowded and rugulose; body smaller in size and more slender, the basal joint of the antennæ more slender. Length (♀) 18.5–22.0 mm.; width 5.2–7.2 mm. Six females from Virginia and New Jersey. [*dentator* Fabr.; *minor* Lec.]. **carolinensis** Oliv.

Elytra in general scheme of maculation nearly as in *titillator* but blackish-brown, rarely paler brown; sculpture coarser and more rugose, more crowded toward the humeri, which are more prominently angular; body smaller, shorter, with more rapidly cuneiform elytra and somewhat less elongate antennæ, these being more or less nearly two and one-half times as long as the body in the male. Length (♂ ♀) 14.7–22.7 mm.; width 4.3–7.0 mm. Rocky Mountain regions of Colorado, New Mexico and Arizona. Abundant. [*clamator* Lec.]..... **maculosus** Hald.

Elytra in maculation nearly as in *maculosus* but shorter, much broader and more parallel in form and deep black in color; sculpture nearly similar but still coarser, closer and more rugose throughout. Length (♀) 15.5–23.5 mm.; width 4.8–7.8 mm. Sierra Nevada Mountains of California and Oregon..... **oregonensis** Lec.

Elytra as in *maculosus*, very rapidly cuneiform from the base, similarly sculptured but with the small spots of rusty brown tomentum more numerous; body very much larger in size; antennæ (♂) two and three-fourths times as long as the body, the basal joint much thicker than in *maculosus*, more finely and evenly punctured and clothed uniformly but not densely with short appressed white hairs, the fourth joint shorter than the third but about half as long as the elytra; entire vertical front of the head extremely densely punctate

and pubescent. Length (♂) 27.5 mm.; width 8.7 mm. Colorado,—Levette.....**strenuus** n. sp.

Elytra as in *maculosus* in form but more elongate, rapidly cuneiform (♂) or nearly parallel (♀), differing greatly in maculation, dark red-brown to blackish in color, with relatively small separated punctures, not denser though granuliform toward the humeri, clothed evenly but not very densely with very short, decumbent, ashy hairs, with small specks of blackish-brown tomentum sparsely intermingled, these being simply a reduced form of the darker spots in *maculosus* and *carolinensis.* as plainly shown occasionally by their oblique arrangement; prothorax relatively larger than usual and with strong, stout lateral spines, the central tubercle strong to almost obsolete. Length (♂♀) 24.0–30.0 mm.; width 6.6–8.4 mm. Wisconsin, Indiana and New York. [*confusor* Kirby].....**notatus** Drury

3—Body pure red-brown in color and of short, broad, parallel form, somewhat as in *oregonensis* in outline but much smaller; elytra with sculpture and maculation nearly as in *maculosus*, but with the punctures in the larger patches of whitish uniform hairs, which separate the spots of dense dark brown tomentum, much larger and more isolated, the surface not so rugose except near the humeri; antennæ much shorter, three-fourths longer than the body (♂) or but little longer than the latter (♀). Length (♂♀) 14.2–20.0 mm.; width 4.2–6.8 mm. California (Siskiyou Co.)...**obtusus** Csy.

Body deep black in color, slightly shining but never having metallic gloss, moderately elongate, stouter than in *scutellatus*, the elytra strongly cuneiform (♂) or nearly parallel (♀), the punctures coarse and everywhere very dense, forming transverse rugæ, the vestiture consisting of short decumbent and unevenly distributed dark brown hairs, with small spots of dense white hairs intermingled; antennæ (♂) rather less than two and one-half times as long as the body, uniformly black, or (♀) slightly longer than the body, black, with white annuli at the bases of the joints. Length (♂♀) 15.0–24.0 mm.; width 4.6–7.8 mm. Rocky Mountains of Montana and Colorado to northern Oregon.....**monticola** n. sp.

Body deep black but generally with more or less distinct subæneous lustre, highly polished; outline narrower, slightly more elongate; elytra less rapidly or strongly cuneiform, parallel in the female, the punctures rather coarse but much shallower and less close-set than in *monticola* and forming transverse rugulation only on parts of the surface; antennæ (♂) barely twice as long as the body, or (♀) similar to the preceding but with the white basal annuli feebler. Length (♂♀) 14.8–22.0 mm.; width 4.5–6.9 mm. Maine to Wisconsin (Bayfield). [*resutor* Kirby; *mutator* Lec.]....**scutellatus** Say

4—Body more elongate than in any except certain females of *carolinensis*, parallel in the female, the integuments nearly black, the elytra nudely showing in certain small spots, mingled with the large dense patches of white and ochreous-yellow tomentum, which are arranged in broad ragged oblique lateral fasciæ, somewhat as in *titillator* and *maculosus*, the external outline gradually rounding and narrowing behind and produced subacutely at the tips, the punctures not coarse,

isolated as a rule, coarse, close and rugose basally; antennæ very slender, pale in color, barely at all longer than the body in the female. Length (♀) 24.5 mm.; width 7.0 mm. Wisconsin (Bayfield),—Wickham. [*marmoratus* Rand., *fautor* Lec., and *acutus* Lacord.].

marmorator Kirby

Clamator Lec., of which I have typical examples before me, does not differ in any way from *maculosus; strenuus* is very much larger than any example of a large series of *maculosus* at hand from various localities and, having in view the longer antennæ, with very stout and evenly sculptured basal joint, very densely sculptured front and other characters, I believe that it will prove to be specifically different; if not it can readily be reduced to the status of a subspecies or variety. *Obtusus*, which has been suppressed in the catalogue, is a widely isolated species; it differs from related forms in the scutellum, among many other features, this being completely glabrous, excepting a few hairs at base, in all six of the well preserved examples in my collection; they were collected by Mr. Koebele. *Angusticollis* is peculiar in its small size, very narrow form, feebly developed thoracic spines, sculpture of the elytra and very short male antennæ. *Resutor* Kirby and *mutator* Lec., were described from the regions about Lake Superior and are unquestionably the common eastern *scutellatus* of Say; so it is certain that the evidently different and much stouter, very much more densely sculptured mountain form, named *monticola* above, has not been described hitherto but mingled in collections with *scutellatus;* when carefully segregated the differences become very obvious. In associating *mutator* with *maculosus* and *oregonensis* with *scutellatus* Dr. Horn (Tr. Am. Ent. Soc., 1885, p. 193) has exactly reversed the reality, *mutator* being a synonym of *scutellatus* and *oregonensis* a valid species near *maculosus;* it is in no way related to *scutellatus*.

Ptychodes Serv.

This genus is introduced merely to state that the species we have been calling *vittatus* Fabr., is *trilineatus* Linn., as determined by Bates in the "Biologia." The opportunity is further taken, however, to state that the Arizona species described by the writer under the name *abbreviatus* and arbitrarily suppressed in our catalogue, is based upon a well preserved example—but female and not male. On again comparing it with three females of *trilineatus* from

Louisiana and Texas, it is observed to differ not only in the form of the sutural white vitta, which is limited to a very short space just behind the scutellum and continued thence to the apex by the ordinary small brown hairs of the rest of the surface, showing that this is in no sense an effect of denudation, but in its decidedly longer antennæ, more cuneiform elytra, with larger condensations of yellow tomentum and distinctly narrower truncature of the fifth ventral segment. I have no hesitation in adhering to my original opinion in regard to its specific status.

Hammoderus Thoms.

The following species differs from any *Goes* in its very stout form of body, much longer basal joint of the antennæ, which is smooth and only finely pubescent, the hairs closely decumbent, and in the broader tarsi:

Hammoderus amplipennis n. sp.—Very stout, the elytra subparallel, piceous-black in ground color, clothed closely above with short coarse yellowish-cinereous hairs, which, on the elytra, are interspersed with numerous sparse and evenly distributed small points of denser hairs of the same color, the under surface very densely clothed with slightly longer and more whitish hairs, sprinkled thickly with nude points about certain punctures which bear each a longer erect hair; head basally and the pronotum with strong and very dense, rugose punctuation; antennæ in the type very slender, only slightly longer than the body, clothed densely with yellowish and closely recumbent pubescence, with only a very few short bristles along the lower surface of the basal joints, the joints one to five more or less denuded along their upper surface, the first joint long, shorter than the third but longer than the fourth and much longer than the prothorax, the latter short and strongly transverse, with well developed spines; scutellum densely clothed with yellowish pubescence, not at all parted; elytra large, twice as long as wide, together broadly rounded at apex, the sutural angles rounded, having small, apically fine, separated punctures, coarser and strongly granose basally; fifth ventral broadly sinuate at tip, with obtusely rounded angles; legs and tarsi minutely, thickly pubescent, the tibiæ in part denuded. Length 29.0 mm.; width 10.0 mm. Colorado,—Levette.

Differs from *tessellatus* Hald., from Georgia, which also belongs to this genus, in its larger size and stouter form, also in the smaller and more uniformly distributed points of denser elytral vestiture; these are formed each about a single puncture, which however does not seem to differ much from the other punctures and does not bear a longer hair. The type is probably a female.

Goes Lec.

This genus is easily distinguished from the preceding by the much shorter and more hairy basal joint of the antennæ, which is generally scarcely more than twice as long as wide, and sometimes less, and always much shorter than the fourth joint as in *Ptychodes;* also in the less obese form of the body and less dilated, though similarly well developed tarsi; the antennæ are but little longer than the body even in the male; the type of elytral ornamentation is the broadly, indefinitely and generally very brokenly fasciate, sometimes becoming faintly nubilous or virtually uniform. We have the following five or six species, of which *tigrinus* is the generic type:

Scutellar vestiture broadly parted by a glabrous impressed line, which broadens basally. Body moderately stout, piceous-black, the elytral vestiture very short, dense, white, mingled with smaller dark brown areas which are very irregular, somewhat nubilously defined and forming two broad broken fasciæ, one near basal fourth, the other more oblique and before apical fourth; antennæ pale, the tips of the joints black, the basal joint black, the bristling black hairs only visible beneath and sparse; punctures of the head and prothorax very fine, sparse. Length (♀) 25.5 mm.; width 8.0 mm. Pennsylvania. [*tomentosus* Zieg.]..... **tigrinus** DeG.

A—Nearly similar, the shorter elytra being partially due to sex in the single type, more nearly black in color, the dark mottling of the elytra exceeding in area the white and more sharply defined than in the preceding, the punctures rather coarse and more irregularly disposed, having certain small impunctate areas near the base; scutellum narrower; antennæ darker, the basal joint bristling with erect setæ through a much greater part of its circumference; punctures of the head coarser, those of the pronotum mingled with coarse and sparse punctures. Length (♂) 23.0 mm.; width 7.1 mm. Texas..... **marmoratus** n. subsp.

Scutellar vestiture not or only very finely parted along the middle....2

2—Larger species, always over 15 mm. in length, the elytral vestiture bicolored or approximately so.....3

Small species, the elytral vestiture tricolored.....5

3—Form stouter, blackish-brown, the elytra densely clothed with very short ochreous hairs, becoming very slightly more yellow apically, having the basal fifth of the length and a broad and rather sharply defined solid transverse fascia at apical third, which is interrupted at the suture, very dark umber-brown; antennæ very pale, slender, the basal joint dark brown, herissate sparsely almost throughout; punctures rather strong and close on the occiput, smaller and close on the prothorax, coarser, less close and basally graniferous on the elytra. Length (♂♀) 17.0–25.0 mm.; width 5.2–7.5 mm. Pennsylvania and Wisconsin..... **pulcher** Hald.

Form more slender, the elytral fasciæ extremely nubilous and faint or wanting 4

4—Color pale reddish-brown throughout; antennæ very pale, with the basal joint not decidedly darker and bristling throughout with stiff short setæ; punctures of the head rather strong, deep and moderately close, of the prothorax slightly smaller and dense, of the elytra rather coarse, well separated, becoming rugose toward the humeri, the vestiture of the elytra very short, rather coarse, dense, feebly and indefinitely mottled with pale brown, almost entirely so basally, and with a very feebly defined entire transverse fascia of the same near posterior third. Length (♀) 20.7 mm.; width 5.9 mm. New Jersey ..... **pulverulentus** Hald.

Color darker brown, the prothorax and legs partially blackish; antennæ very pale, with the basal joint much darker and more evenly and sparsely punctate and pubescent than in the preceding; head strongly, very deeply and closely punctate throughout; prothorax more strongly and deeply punctate than in *pulverulentus* and with two small subanterior ill-defined areas, which are less coarsely, densely punctured and not visible in that species; scutellum more impressed medially; elytra with coarser and perforate, less widely spaced punctures, denser posteriorly, more feebly rugose at the humeri, clothed more sparsely but more evenly throughout with short whitish pubescence, which is everywhere faintly mottled with more condensed irregular spots of the same tint; tarsi but feebly dilated. Length (♂) 18.0 mm.; width 5.2 mm. New York (Bluff Point, Lake Champlain). **laurenticus** n. sp.

5—Form rather narrow, convex, densely punctate, the punctures of the elytra well separated and in part subserial in arrangement, blackish, the hind body, legs and antennæ throughout pale, the basal joint pubescent and moderately herissate; head, prothorax and nearly posterior third of the elytra with dense uneven yellow pubescence, the remainder of the elytra with white and dark brown pubescence, the latter forming two uneven broad fasciæ, near basal third and just behind the middle; tarsi slender. Length (♂ ♀) 11.5–12.3 mm.; width 3.2–3.6 mm. Illinois and Pennsylvania (the elytral punctures closer and less serial in the latter example) ..... **debilis** Lec.

There is a distinct difference in elytral punctuation between the western males of *debilis* at hand and the single old and more or less imperfect male from Pennsylvania, but there is not sufficient material upon which to form any certain opinion. The single male of *laurenticus* was obtained by the writer by beating from some low bushy trees near Plattsburg, during the past summer; it has quite a different general habitus from *pulverulentus*, due to its smaller size, coarser and closer elytral punctures and more uniform vestiture.

Microgoes n. gen.

The type of this proposed new genus is *Goes oculatus* of LeConte. It differs from *Goes* in the small size of the body, different type of elytral ornamentation, smaller and still more slender tarsi and, more especially, in the very long and filiform antennæ, which are often much more than twice as long as the body. These differential characters are far more important than those separating the well known tropical genera *Hammoderus*, *Tæniotes* and *Deliathis;* for, in addition to those given above, the eyes are very much reduced in size in *Microgoes*. The two species in my cabinet may be separated as follows:

Black throughout the body, legs and antennæ, the elytra sometimes feebly picescent, the entire aspect cinereous however, because of the rather close and even, though finely and vermicularly disintegrated, clothing of short cinereous hairs, each elytron with a rounded eye-like spot of black or blackish hairs at three-fifths from the base on the median line; pubescence beneath and on the legs dense, uniform and cinereous-white; antennæ (♀) very slender, not quite twice as long as the body, the basal joint rather slender, nearly three times as long as wide but not as long as the fourth joint, all clothed with decumbent ashy hairs, not densely placed and not herissate beneath; prothorax extremely densely, confusedly and rather finely punctato-rugose and opaque, the spine acute; scutellum semicircular, densely pubescent; elytra moderately elongate, much more than twice as long as wide, narrowing arcuately behind in nearly apical third, the apices rounded; elytral punctures moderately coarse, deep, close-set and asperulate. Length (♀) 9.7–11.0 mm.; width 3.0–3.4 mm. New York..... **oculatus** Lec.

Black, the general aspect more intensely black than in the preceding, owing to the much less dense cinereous vestiture, which rather sparsely but irregularly speckles the elytra, the eye-like spots of the latter in the same position but very much less sharply defined; general form and sculpture similar but with the elytra much less elongate, being not evidently more than twice as long as wide in either sex; antennæ similarly very slender and filiform and even longer, being nearly two and one-half times as long as the body in both sexes, semi-nude throughout, the ashy decumbent hairs being very much sparser than in *oculatus;* whitish hairs of the under surface, and especially of the legs, much less dense; male with the fifth ventral but little longer than the fourth, very broadly truncate, this segment in the female being fully one-half longer than the fourth and more narrowly truncate at tip. Length (♂♀) 8.7–10.3 mm.; width 2.8–3.0 mm. Pennsylvania (Westmoreland Co.),—Schmitt. **tenuicornis** n. sp.

I have seen no account of the food habits of these species, which do not seem to be very common in collections.

Tribe MESOSINI.

Synaphœta Lec.

The species of this genus are of broad and rather flattened form, remindful of certain of the Acanthoderes, but with narrower and more cylindric prothorax; the elytra have two sinuous black or brown fasciæ from the lateral margins before and behind the middle, the fasciæ but very seldom crossing, though frequently nearly attaining, the suture. The antennæ are more or less nearly one-half longer than the body in the male and only very little longer than the body in the female; they are comparatively stout basally and are fringed beneath with long hairs, dense in the male or sparser in the female; the basal joint is long and obconic. The prothorax is bilineate with black or brown and obtusely tuberculate at the sides behind the middle. The species in my collection seem to be four in number as follows:

Humeri of the elytra very prominent and protuberant. Body of rather large size, black throughout, clothed not very densely with gray decumbent hairs mixed with some clusters that are fulvous, this being especially evident at the margins of the black lines and fasciæ, these more nearly attaining the suture than in any other; antennæ sparsely ashy-pubescent, the joints densely cinereous at base, their surface throughout very minutely, closely punctulate, mingled on the basal joint with sparse and moderately large, perforate punctures, becoming dense and coarsely rugose beneath; head throughout with moderate, sparse perforate punctures, in addition to the minute close punctulation; prothorax but little wider than the head, two-thirds wider than long, slightly uneven, sparsely punctate; scutellum with blackish pubescence, fulvous along the middle, more broadly basally; elytra three-fifths longer than wide, nearly one-half wider than the prothorax, the sides broadly sigmoid; apices broadly rounded; flanks abruptly vertical along an obtuse line; surface coarsely, not densely punctate, the punctures becoming very strongly tuberculiferous basally; line along the suture rather elevated; male with the fifth ventral short, broadly rounded, with a narrow and rather sharply defined median sinus. Length (♂) 21.0 mm.; width across the humeri 9.6 mm. California (locality unrecorded). **humeralis** n. sp.

Humeri of the elytra not or only very slightly prominent.....2

2—Elytral punctures almost as coarse as in the preceding but less coarsely tuberculate basally; body smaller, narrower, similarly clothed and maculate with black, except that the ante-median fascia is more broken internally, does not extend so far toward the suture and, more especially, is flexed forward at the sides nearly to the humeri, the post-median finely attaining the suture in a V-shaped line,

also flexed at the sides but backward, the punctures forming still more conspicuous black dots throughout; head much more coarsely and closely perforato-punctate, the antennæ very much more slender and filiform, the basal joint shorter and not so stout but more rugosely sculptured, the ashy basal bands of the remaining joints even more dense and conspicuous; prothorax not quite so transverse, coarsely punctate; scutellum with the median fulvous stripe more parallel; elytra longer, nearly three-fourths longer than wide, the sides straighter and more parallel, very broadly rounding at apex; under surface and legs with ashy pubescence, variegated with small blackish spots, especially on the femora; fifth male ventral as in the preceding but rather more narrowly rounded, the sinus equally sharply marked. Length (♂) 15.5 mm.; width 7.0 mm. California (Tulare Co.).....**annulata** n. sp.

Elytral punctures relatively much finer though distinct, sparse; antennæ similarly annulate, the tibiæ in the same way uniannulate.....3

3—Body very broad, feebly convex, clothed and maculate nearly as in *humeralis*, except that the fasciæ and pronotal vittæ are brownish-black and the ashy hairs of the elytra are more intermingled with fulvous and more divaricately oblique in arrangement, especially near two marked longitudinal impressions of each elytron, which are not so evident in any other species; head with moderately coarse, deep and rather close-set perforate punctures, about twice as numerous as in *humeralis*, the antennæ relatively longer and less stout, with the basal joint shorter, less stout, more punctured and rugose and, especially, with different vestiture, the hairs being coarser, longer and denser and more conspicuously intermingled with brownish; prothorax still less transverse, one-half wider than long, the lateral tubercle still less elevated and more obtuse; scutellum as in *annulata;* elytra much shorter, barely more than one-half longer than wide, the sides subparallel, the punctures sparse, becoming granose basally throughout; fifth male ventral short, very broadly rounded, very indefinitely subtruncate medially and without trace of the median sinus of the two preceding species. Length (♂) 18.0 mm.; width 8.2 mm. California (near San Francisco).....**guexi** Lec.

Body much narrower, smaller in size, similar in vestiture and maculation but with the fasciæ and vittæ deep velvety-black and narrower than usual; prothorax shorter than in any other, very nearly twice as wide as long, the lateral tubercles less broadly obtuse than in the others; scutellum as in the preceding; elytra parallel, together semicircularly rounded at tip, with fine but strong, sparse punctures, which do not become at all graniform basally, except near the humeri; under surface and legs with more fulvous than cinereous hairs. Length (♀) 12.7 mm.; width 5.4 mm. California (locality unrecorded).....**brevicollis** n. sp.

The head and prothorax in *humeralis* are distinctly broader and more massive than in *guexi*, and the radical differences in the sexual modifications of the fifth male ventral will readily serve to distin-

guish the latter from either *humeralis* or *annulata*. I am unable to say whether the brownish color of the pronotal vittæ and elytral fasciæ in my single representative of *guexi* is a permanent or accidental feature, but this is of slight moment. There are probably many other species of this genus on the Pacific coast, to which region it is narrowly restricted, but they all seem to be rather rare individually.

Tribe ACANTHODERINI.

The chief distinguishing feature of this tribe, besides the constantly strong acute lateral thoracic teeth or spines, is the clavate form of the first antennal joint; in this way it is markedly distinct from any of the Leiopi or Acanthocini which follow, and, though apparently not very important, it has here full tribal value. The species are generally stout in build, but in some groups they become more slender than some of the Acanthocini. The types of *Acanthoderes* as described by Lacordaire, are short thick trigonal forms, destitute of any kind of sculpture, with truncate elytral tips, peculiar sternal structure and with the antennæ of the male slightly longer than the body. This indicates that there are a number of distinct genera at present united under *Acanthoderes*, as could be assumed very readily on viewing the habital differences, for example, between *morrisi*, *quadrigibbus* and *funerarius*. These genera, so far as represented in the very limited material of my collection, excepting *Acanthoderes* which I have not seen, may be briefly defined as follows:

Prosternal and mesosternal processes broad, truncate, bituberculate on their opposing faces; elytra without trace of sculpture of any kind, trigonal, truncate at apex; antennæ (♂) sensibly longer than the body, or (♀) slightly shorter. [Type *Cerambyx daviesi* Swed.]. Colombia and Brazil. . . . . ***Acanthoderes**

Prosternal and mesosternal processes both rather steeply sloping, not prominently opposed, the former simple, the latter with a small juxta-coxal tubercle at each side; elytra strongly sculptured, frequently carinate, short, trigonal, truncate at the tips; antennæ as in *Acanthoderes*. [Type *Acanthocinus quadrigibbus* Say]. North and South America. . . . . **Psapharochrus**

Prosternal and mesosternal processes as in the preceding, rather broad, evenly sloping, both wholly devoid of tubercles; elytra short, parallel, together circularly rounded and perfectly entire at apex, smooth, finely punctate; antennæ much shorter than the body in both sexes,

stout, not annulated, the outer joints short and compactly joined. [Type *Acanthoderes funerarius* Bates]. Mexico and Central America.

***Pardalisia**

Prosternal and mesosternal processes differing from any of the preceding, narrower, the latter very gently sloping, perfectly simple; elytra elongate, very feebly cuneiform to subparallel, obliquely truncate at apex, nearly smooth, punctured, each with or without two feeble discal raised lines; antennæ as in *Acanthoderes* but slender, annulate; last dorsal segment of the abdomen (♀) produced slightly at apex as in the Acanthocinini, which is not the case in any of the preceding genera. [Type *Æ. decipiens* Hald.]. Eastern America.

Ægomorphus

ACANTHODERES Serv.—Limited so far as known to a few peculiar species of the northern part of South America, as stated by Lacordaire (Gen. Col., IX, 2, p. 753).

PARDALISIA n. gen.—The type of this genus, as stated above, is of isolated habitus in the present group, owing to the stout parallel form of the body, short thick compact antennæ, conjointly rounded elytral apices and type of ornamentation.

ÆGOMORPHUS Hald. (Dej. Cat.)—This is a very distinct genus, forming a bond between the Acanthoderini and Acanthocinini; so far as known to me, we have in the Atlantic regions of North America, to which it is probably confined, but two species—*decipiens* Hald., and *morrisi* Uhler. As this genus is valid it will be necessary to rename the genus *Ægomorphus* of Thomson (Essai, p. 336).

Psapharochrus Thoms.

Besides the described *quadrigibbus* Say, and *cornutus* Bates, which I have before me, this genus will include many other similar species from Mexico and Central and South America, among which the two following appear to have been as yet unannounced:

***Psapharochrus histrio** n. sp.—Form and ornamentation very much as in *quadrigibbus*, the elytral punctures sparse and stronger, involved in conspicuous black dots, which are absent in that species; body stout, rather convex, black, the vestiture fine, close, very short and dense, red-brown, variegated with some black maculation on the elytra, an irregular oblique discal spot, a small one slightly posterior and near the side and two small ones near the apex, on each, being evident; each elytron also with an oblique ochreo-cinereous sinuous fascia from the margin behind the humerus to about inner third, surrounded internally by a blackish border; head dark brown, with scattered small perforate punctures; antennal joints three and four each with two loose pale annuli, the remainder each with a single subbasal to basal annulus; prothorax

twice as wide as long, the lateral tooth very large, triangular and medial, the two dorsal tubercles strong, the median carina acute, wanting in basal half; punctures coarse, well separated; elytra triangular, with broadly rounded sides, three-fifths longer than wide, the apices sinuato-truncate, the outer angle acute but not much produced; inner elevated line evident medially, flexed outward and feeble though tuberculose basally, the outer line obsolete. Length (♀) 11.0 mm.; width 4.4 mm. Honduras.

It is rather singular that no Central American species seems to have been recorded by Bates, which can be said to be especially allied to *histrio*. It bears a very close general resemblance to *quadrigibbus* but has very much larger lateral thoracic teeth, which are not at all flexed forward at apex, as is related by Bates of *sylvanus*.

The following is allied in general appearance:

***Psapharochrus guatemalensis** n. sp.—Form stouter than in the preceding but almost identical in color and ornamentation; head similar in color and sculpture; antennæ similarly banded, piceous in color; prothorax shorter and broader, the lateral tooth similar, large and triangular, but not quite so large as in *histrio*, the dorsal tubercles strongly elevated, simple; medial carina less acute than in *histrio* but becoming obsolete only very near the base; punctures coarse and well separated; elytra similar but broader and more rounded at the sides, the oblique fascia longer, otherwise similar, except that the outer of the two dorsal lines is also evident medially; legs nearly similar, except that the tarsi are very much stouter. Length (♀) 13.8 mm.; width 6.0 mm. Guatemala (Villa Nueva, near the city).

If I am correct in considering the type of each of the above species as female, as would appear from the long and rather pointed fifth ventral, which is nearly similar in each, they are undoubtedly distinct; though so strikingly similar in ornamentation and sculpture, the differences in the tarsi are rather remarkable.

In this genus the second antennal joint becomes more elongate than in the preceding sections of the Lamiinæ.

Tribe ACANTHOCININI.

Lagochirus Erichs.

Lagocheirus Lac.

This is a large genus in the warmer regions of North and South America and the species are of very broad form, somewhat as in *Psapharochrus*, but more depressed and with the elytra usually less

rapidly cuneiform, though in *præcellens* Bates, they are as strongly trigonal and almost as convex as in any of that genus. Besides a good series of *araneiformis* and one each of *longipennis* and *præcellens* Bates, I have in my collection two other species, which are not identifiable with any of those recorded by Bates; these are the following:

***Lagochirus parvulus** n. sp.—Form much more parallel than in *araneiformis* and very much smaller in size, though almost similarly marked, the lateral elytral dark spot similar but more sinuate antero-internally, black, densely clothed throughout with pale brown vestiture, variegated but slightly, excepting the lateral dark area and a very few extremely faint posterior transversely wavy lines on the elytra; head dark, the sculpture concealed; antennæ (♂) very slender, unusually short, two-thirds longer than the body, evenly and densely ochreo-pubescent throughout, without trace of annulation and with the node of the sixth joint obsolete, represented by a glabrous convex spot; prothorax small, nearly twice as wide as long, nearly as in *araneiformis*, the elytra also similar, except that they are parallel, the punctures still more obsolescent apically; last dorsal segment much more narrowly rounded; legs shorter, the femora much more feebly clavate, the tarsi more slender, the anterior but slightly dilated and with short cilia; last ventral segment broadly, almost rectilinearly truncate. Length (♂) 11.0 mm.; width 4.6 mm. Panama (Natá).

Resembles very much an extremely small example of *araneiformis*, but parallel and with relative smaller prothorax and truncate, not broadly sinuate, apex of the fifth ventral segment.

***Lagochirus procerus** n. sp.—Form narrower and more elongate than *araneiformis*, blackish, densely clothed with very short whitish tomentum, the dark lateral spot of the elytra as in *araneiformis* but with much more extended white area behind the spot and between it and the distinct entire transverse dark fascia at apical fourth, which shades off gradually paler posteriorly and with its sharply marked anterior margin biangularly reëntrant; punctures sparse; fasciculi and granose basal ridges as in *araneiformis;* head similar, the antennæ (♂) slightly more slender and not uniformly clothed but with joints 1–3 finely mottled, 4–6 biannulate with cinereous, the node and erect seta similar on the sixth, the remaining joints with dense cinereous-white pubescence, solid on the outer joints, darker at base and apex on the seventh, diminishing on the following; prothorax similar but smaller; elytra more elongate, moderately cuneiform, three-fourths longer than wide; fifth ventral a little longer, more strongly rounded, with the median sinus narrower and very distinct; last dorsal broad, sinuate at apex, with rounded angles. Length (♂) 20.0 mm.; width 8.5 mm. Unlabeled, but probably from Lower California.

This species has long figured in my collection under the name

obsoletus Thoms., but on reading Mr. Bates' description of that form, I have no hesitation in announcing it as distinct; the posterior fascia is obsolete in *obsoletus* but is very pronounced in *procerus*.

Glaucotes n. gen.

The type of this proposed genus is *Leptostylus yuccavorus* Fall, from southern Arizona; it differs from *Leptostylus* in the smooth surface of the elytra, varied only by three very even and feebly elevated discal costules, more densely pubescent, vanishing basally and wholly devoid of clustered erect hairs of any kind; it also differs from any form of true *Leptostylus* in the rounded and not truncate elytral apices. Its general habitus is very different from any *Leptostylus*, although apparently not distinguished by structural peculiarities other than those mentioned. There are probably several species of *Glaucotes*, judging by my material.

Leptostylus Lec.

This is a very large and, as organized at present, not very sharply limited genus, of wide distribution in the North and South American continents; in the rather stout, roughly sculptured body it is somewhat intermediate between *Lagochirus* and the Leiopi. In this country it is most abundantly represented in Florida. The following apparently new species have come to light more or less recently:

Leptostylus lecontei n. sp.—Moderately stout, dark brown, clothed densely with luteo-cinereous vestiture, mottled with paler and darker areas; front between the eyes before the antennal prominences much wider than long; antennæ (♀) mottled, a third longer than the body; prothorax four-fifths wider than long, nearly as wide at apex as at base, the prominences moderate, broadly rounded; surface with a few small widely scattered punctures and more in transverse line at apex and base, also with five moderate tubercles, the vestiture uniform; elytra three-fifths longer than wide, much wider than the prothorax, the sides arcuately rounding, more so apically, to the transversely and sharply truncate apices, the humeri rather prominent; surface with small sparse penicillate black warts, some of which are on an oblique discal raised line at outer third, also darker in a large post-humeral lateral area, extending to the middle and obliquely truncate internally somewhat on the disk; also a fine oblique line on each just behind the middle, meeting the other on the suture and before which, and between it and the lateral dark area, the vestiture is whiter; also with two small dark, and two or three paler,

areas, behind the oblique fascia; femora strongly clavate. Length (♀) 10.0 mm.; width 4.1 mm. Florida (Lake Worth).

I do not know of any species closely allied to this; in general ornamentation it is somewhat as in *planidorsus*, but is much narrower and with more anterior position of the oblique fasciæ.

Leptostylus crescenticus n. sp.—Similar to the preceding in coloration and vestiture, but the body is narrower in form, the front quadrate, the prothorax more narrowed apically than basally and with only three tubercles, the outer posterior being obsolete; the elytra are similar but with the sparse punctures rather coarser, the arcuately oblique pale fasciæ more posterior and not margined behind with darker tint. Length (♀) 8.6 mm.; width 3.4 mm. Florida (Crescent City),—Schwarz.

For many years the type of this species has been in my collection under the name *collaris* Hald., but on reading the original description of *collaris*, I find the two do not agree in any important particular. The elytral truncatures are as sharply marked as in *lecontei*.

Leptostylus tæniatus n. sp.—Stout, oblong, convex, blackish-piceous, the minute dense and coarse vestiture cinereous, with small fulvous clusters of more erect hairs sparsely intermingled on the elytra, limited by a straight transverse even and densely white entire fascia at the summit of the declivity, the posterior parts like the anterior; front dark, a small yellowish spot at the centre; antennæ slender, barely longer than the body (♂), a little shorter (♀), the joints to the fifth strongly mottled brown and white, those beyond cinereous, all the joints black at tip; prothorax one-half wider than long, carinate medially and with a short oblique elevation at each side of the middle anteriorly, the sides obtusely tumid at the middle; vestiture concealing the sculpture, except an even transverse subbasal line of punctures; elytra parallel, rapidly oblique and moderately declivous behind, two-fifths wider than the prothorax, the tips narrowly arcuato-truncate, without sharp angles; two discal ridges uneven, distinct, fasciculato-spinulose, the outer bent outwardly near the base; punctures coarse, rather close but filled with the vestiture; femora clavate; tarsi rather short and slender throughout, the basal joint of the posterior not twice as long as wide. Length (♂♀) 8.4–10.8 mm.; width 3.6–4.5 mm. Florida (Lake Worth),—Kinzel.

Very distinct from any other of our known species, but its relationship with Cuban species cannot be stated at present; it was sent in considerable number.

Leptostylus divisus n. sp.—Narrower, more elongate and less convex, parallel, clothed densely with rather dark cinereous vestiture, becoming brown on the elytra behind an even posteriorly arcuate transverse line near posterior fourth, the coloration, sculpture and vestiture throughout

as in *aculifer;* antennæ a little longer than the body, slender, the scape long and notably thick; legs and tarsi as in *aculifer.* Length (♀) 11.2 mm.; width 4.2 mm. Texas.

Belongs near *aculifer* Say (*marginellus* Hald.) but larger, much more elongate, with a longer and thicker scape and with the outer antennal joints less rapidly abbreviated. In both sexes of *aculifer* the third antennal joint is as long as the last four combined, the antennæ being not longer than the body even in the male; in *divisus* they are much longer than the body in the female and probably still longer in the male, with the outer joints less rapidly shorter; the more basal joints are more strongly dilated at their apices. *Albescens* Hald., is a species widely distinct from *aculifer* in its larger size, denser and whiter vestiture, bifasciate with brown near the apex and much longer antennæ, these being nearly as in *divisus* but with more slender scape; the latter species is much more slender in bodily form; *albescens* has for a synonym *asperatus* Hald.

Leptostylus mutilus n. sp.—Form short, convex, dark piceous-brown, the integuments not concealed by the small and uniformly ochreous-brown hairs, which at certain parts are denser though of the same color throughout; head small, much narrower than the prothorax, not distinctly sculptured, the antennæ (♀) longer than the body, maculate with ochreous and brown; prothorax not quite twice as wide as long, the sides feebly rounded, only slightly more so and broadly arcuate medially, without any appearance of prominence or tubercle, the surface almost even, sparsely and rather finely punctate, with a transverse series of coarser punctures along the basal and apical constrictions, also having a small tubercle at each side of the middle anteriorly; elytra one-half longer than wide, much wider than the prothorax, parallel, rounding in apical third or fourth, the apices very narrowly and obliquely truncate, with obtuse but evident external angle, rather coarsely, deeply and sparsely punctate throughout, the surface with an oblique impression from near the humeri toward the suture, also with several uneven and slightly elevated lines, bearing clusters of denser hairs; femora strongly clavate; basal joint of the hind tarsi twice as long as wide. Length (♀) 7.0 mm.; width 3.2 mm. Florida (Key Largo).

This species is allied to *terræcolor* Horn, but is shorter in form, with relatively smaller head and prothorax and much more narrowly truncate elytra.

***Leptostylus batesi** nom. nov.—This name is proposed for the Central American *Leptostylus albescens* Bates (Biol. Cent. Amer. Col., V, p. 387) which is preoccupied by Haldeman for a distinctly valid American species, hitherto suppressed as a synonym of *aculifer* Say, as stated above.

Astylidius n. gen.

This generic name is proposed for certain small species, hitherto placed in *Leptostylus*, but which differ in the smaller, more acute and subangulate lateral tubercles of the prothorax, situated a little more markedly behind the middle, in the very narrow metasternal episterna, longer antennæ and in the very slender tarsi, the basal joint of the posterior being three or four times as long as wide. The type is *Leptostylus parvus* Lec., and in addition I have before me two other species, which may be described as follows:

Astylidius versutus n. sp.—Small, more slender than usual, convex, rufo-piceous, rufous beneath, not very densely clothed with minute luteo-cinereous hairs, which do not conceal the punctures, the elytra each with a short transverse discal line of white at three-fifths; head densely clothed with umber hairs, deeply indented between the strong antennal tubercles, the antennæ very slender and filiform, three-fourths longer than the body, pale, mottled with darker, the articular apices darker, the scape moderate, elongate-ovular; prothorax two-thirds wider than long, finely, loosely punctate, the surface even, excepting a short and very oblique ridge at each side of the middle anteriorly, the median line slightly prominent behind the middle for a short distance; lateral tubercles just behind the middle, small and obtusely angulate but prominent; elytra three-fourths longer than wide, parallel, rounding to the subacute apex in apical third, the apices obliquely and arcuately truncate, without distinct angles; elevated lines feeble, the inner with a small acute tubercle near the base, the punctures rather coarse, deep and well separated, close on the inflexed flanks; femora strongly clavate, tarsi slender, the first joint of the posterior slender, much longer than the next two combined. Length (♂) 5.0 mm.; width 1.7 mm. District of Columbia.

Allied to *parvus* Lec., but differs in its more elongate form, longer legs and antennæ and somewhat in the form of the lateral thoracic tubercles, which in *parvus* are a little smaller and more acute.

Astylidius leiopinus n. sp.—Somewhat similar to the preceding but much stouter, convex, piceous, clothed rather closely and uniformly with fine luteo-ochreous pubescence, the elytra with a narrow straight oblique line on each, from the suture slightly behind the middle, to the median line at three-fifths, also with a slight amount of white pubescence exterior to this; head narrower than the prothorax, the antennæ (♀) two-thirds longer than the body, pale, maculate with ochreous and brown pubescence; prothorax twice as wide as long, nearly even, the two anterior short oblique ridges obtuse, the lateral projection at basal two-fifths obtusely angulate and distinct; punctures fine, not close, with a line of slightly larger punctures near the base; scutellum dark; elytra one-half longer than wide, parallel, gradually rounding, than oblique in apical

two-fifths, the pointed apices narrowly, evenly and strongly rounded; surface with not wholly concealed and rather coarse, well separated punctures and three or four irregular though evident costules, bearing strongly marked clusters of erect hairs of darker tint; under surface dull rufous; femora clavate; first hind tarsal joint between three and four times as long as wide. Length (♀) 6.0 mm.; width 2.6 mm. Texas (Columbus).

Differs from *versutus* in its much stouter form, more transverse prothorax and in the oblique elytral fasciæ nearly as in *Leiopus alpha* and others.

Astylopsis n. gen.

Although the general facies of the body in *Lamia macula* Say, is nearly as in *Leptostylus*, the coxæ similarly very widely separated and the tarsi similarly thick, there are several structural differences of importance, among which may be mentioned the much less coarsely faceted eyes and the more evenly punctate sculpture of the pronotum, also the narrowed front, smaller organs of the mouth and shorter antennal scape, with the outer angle at apex more acute. For this species I would therefore propose the above generic name and the *Lamia guttata* of Say (*Amniscus commixtus* Hald.) is another member of the genus; the latter name is unaccountably misprinted *sexguttatus*, as a member of *Leptostylus*, by Hamilton (Tr. Am. Ent. Soc., 1896, p. 119).

It is highly probable that *Leptostylus albidus* Lec., from Arizona, will also prove to be generically distinct when more carefully examined, as the erect hairs of the upper surface are wholly foreign to the other species and usually constitute an important generic character in this difficult group. *Amniscus perplexus* Hald., is another apparently peculiar species, which seems to have been misinterpreted by Hamilton; the prothorax is said to have "small impressed punctures," but, more especially, the elytra are said to be "entire at tip," cinereous, "hairy" and mottled with dark brown. In *Amniscus collaris* Hald., the prothorax is said to be "thickly punctured," which, as well as the subentire elytral apices, would render it quite distinct from *Leptostylus lecontei* and *crescenticus* described above.

Nyssodrysina n. gen.

The genus *Nyssodrys* of Bates, as now organized, is very composite, containing many inharmonious elements. No type species

has been designated, but Mr. Bates has fortunately indicated those forms which he considers typical (Biol. Cent. Amer., Col., V, p. 179) and I would therefore formally select *Nyssodrys deleta* Bates, as the type of the genus. On this assumption it becomes possible to give the generic name to our *Leiopus haldemani* Lec., which has recently been placed in *Nyssodrys*, but which is not by any means congeneric with *deleta*. It differs in having a small acute oblique spine at each side of the prothorax very near the base, more convex upper surface of the body and clavate and not gradually thickened femora; the ovipositor is not long but very short, triangular, with rounded apical angle. The lower lobe of the eye is long and suboblong, being but slightly narrower below, the antennæ not quite twice as long as the body, the sterna moderately wide between the coxæ and the elytra are obliquely truncate at tip. The type is *Nyssodrysina haldemani* Lec., occurring in Georgia.

Leiopus Serv.

Omitting certain well characterized species of larger size, named *variegatus*, *wilti* and *setipes*, and some smaller and more obese species of the *crassulus* type, somewhat resembling *Leptostylus biustus* to external view, such as *crassulus*, *centralis* and *decorus*, which I do not have at hand, there are a considerable number of small and more obscure species clustering about *alpha*, *fascicularis*, *punctatus* and *crassulus*, which are invariably confused in cabinets but which, on closer study, seem to lend themselves very well to taxonomic treatment as follows:

Elytra more elongate, twice as long as wide or more, the fascia at or near three-fifths from the base; species eastern in distribution.....2
Elytra not so elongate, less than twice as long as wide, always with more compact and conspicuous cinereous vestiture of the general surface, the fascia more posterior, at about two-thirds from the base; species, excepting *mediator*, of the southwestern—or more essentially Sonoran —faunas.....12
2—Fascia—black bordered anteriorly with cinereous—transverse, with an obtuse and feeble anterior sutural prolongation.....3
Fascia oblique, the two forming a very obtuse angle on the suture, always well behind the middle.....5
Fascia much more oblique, the two uniting on the suture at the middle of the length.....11
3—Sides of the prothorax oblique anteriorly, from the apex of the large prominent triangular tooth at basal third. Body moderately stout,

unusually convex, testaceous, with a large blackish cloud on each elytron centring at basal third, and a small discal cloud near the apex behind the fascia; pubescence cinereous, uneven in distribution; antennæ dark, mottled and with dark articular apices; prothorax very short, finely, densely punctate, with a small indefinite elevation at each side of the middle anteriorly; elytra closely, rather coarsely and conspicuously punctate, twice as long as wide, parallel, the subacute apices narrowly and very obliquely sinuato-truncate, each with three fine feeble discal raised lines, bearing minute distant blackish clusters of erect hairs; upper marginal line of the flanks acute, obtuse basally; femora all distinctly though moderately clavate. Length (♀) 5.4 mm.; width 1.9 mm. Illinois. . **dentatus** n. sp.

Sides of the prothorax subparallel, broadly swollen behind the middle, with a small acute denticle projecting from the convexity. 4

4—Elytra rather convex, not more than twice as long as wide, rufo-piceous, the lateral cloud not defined and scarcely evident; cinereous vestiture sometimes mostly yellowish, not conspicuous near the humeri; antennæ as in the preceding; prothorax smaller and narrower, two-thirds wider than long, almost even on the surface and closely punctulate but with mottled vestiture; elytra coarsely, deeply, rather closely punctate, the punctures separated by scarcely more than their own diameters, the costuliform lines not elevated but with unusually large blackish penicillations; under surface obscure rufous, the metasternum medially, and abdominal segments apically, black; femora abruptly and moderately clavate. Length (♂ ♀) 4.3–6.3 mm.; width 1.4–2.2 mm. District of Columbia and Indiana. **punctatus** Hald.

Elytra more elongate, more than twice as long as wide, testaceous, with the lateral blackish cloud very large, extending fully to the median line, the cinereous or yellowish vestiture inconspicuous, except in a large area before the black fasciæ and toward the humeri; prothorax similar but with the two rounded anterior, and one posterior, black areas, better defined; elytra with the tips similar but not so oblique, the slightly raised lines conspicuously penicillate with black; punctures not so coarse and separated by twice their diameters or more; under surface nearly similar but with denser cinereous vestiture, the femora moderately clavate. Length (♂ ♀) 4.0–6.8 mm.; width 1.3–2.3 mm. A large series from Indiana. [*rusticus* Lec.; *xanthoxyli* Shimer]. . . . . **fascicularis** Harris

5—Femora more or less strongly and abuptly clavate as usual. 6

Femora less clavate, the posterior slender, only very feebly enlarged toward tip in either sex. 10

6—Elytra with the three discal lines rather sharply elevated and distinct, the penicillate points minute and inconspicuous. Body testaceous, the yellowish vestiture of the elytra very minute, not dense and not concealing the sculpture, conspicuously cinereous before the oblique black fasciæ, which are largely formed of three elongate spots on the raised lines; lateral black cloud confined to the flanks behind the humeri, not attaining the latter, the upper line of the flanks rather acute except basally, the punctures moderately coarse, well separated;

prothorax having the triangle of black spots as in the preceding but in shape more as in *dentatus*, the sides straight and oblique from the apex of the large triangular tooth to near the apex, more oblique but straight behind; femora strongly, abruptly clavate. Length (♀) 6.0 mm.; width 2.0 mm. District of Columbia. . **testaceus** n. sp.

Elytra with the three discal threads obsolescent, though generally traceable; sides of the prothorax with a more or less developed minute abrupt denticle as in *punctatus* 7

7—Antennal scape unusually thick, elongate-oval, scarcely four times as long as wide. Body moderately slender and convex, obscure testaceous, the cinereous vestiture longer and coarser than usual, almost concealing the sculpture though not dense; antennæ (♀) pale, mottled, three-fourths longer than the body; prothorax dull, nearly twice as wide as long, with the usual three dusky but not at all tuberculiform spots; elytra rather more than twice as long as wide, parallel, evenly arcuato-convergent at the sides posteriorly to the very narrow and oblique sinuate apical truncatures; surface deeply but not coarsely punctate, the punctures separated by fully their own widths, the lateral black cloud extending inwardly to outer fourth; oblique fascia composed of a few black spots; black clusters few in number but distinct; femora strongly and abruptly clavate. Length (♀) 6.2 mm.; width 2.2 mm. Indiana.

scapalis n. sp.

Antennal scape more slender, more than four times as long as wide . . . 8

8—Oblique elytral fasciæ composed each of three elongate black spots. Body dark brown in color, rather densely clothed with small dusky-cinereous hairs, with the small black points on the three feeble elytral threads very sparse but evident, the lateral black cloud confined to the flanks; prothorax less than twice as wide as long, densely dull, the three blackish spots somewhat convex; elytra formed as in the preceding but narrower, similarly punctured; abdomen fuscous, sometimes partially rufescent; hind femora (♀) unusually feebly clavate for this section though distinctly so. Length (♂♀) 5.0–5.5 mm.; width 1.8 mm. New Jersey and New York (Lake Champlain). A male from Indiana seems to be conspecific; it has all the femora strongly clavate. . . **vicinus** Hald.

Oblique elytral fasciæ continuous or partially so, not clearly composed of spots 9

9—Body unusually short and convex for this division of the genus, pale testaceous, the elytra barely twice as long as wide; pubescence minute, moderately dense, cinereous or yellowish; antennæ moderate; prothorax distinctly less than twice as wide as long, the three blackish spots very ill-defined; elytra more distinctly exceeding the prothorax in width than in any of the three preceding except *testaceus*, rounding behind to the oblique sinuous apices, the black lateral cloud extending inwardly some distance and distinct, the elevated lines obsolete, the fasciculi very few in number; femora strongly clavate in both sexes. Length (♂♀) 4.0–5.2 mm.; width 1.4–1.9 mm. District of Columbia and Delaware.

pleuralis n. sp.

Body normally elongate but of very small size, dark and obscure red-brown, the cinereous vestiture minute and not dense; antennæ dark testaceous, blackish at base; prothorax short, nearly twice as wide as long, not evidently maculate; elytra twice as long as wide, the apical truncatures only feebly oblique, not sinuate but nearly straight and with broadly obtuse external angles; punctures relatively coarse, deep and close-set, the elevated lines obsolete, the black lateral cloud nearly confined to the flanks; fasciculi diffuse, not black and scarcely visible; femora strongly, abruptly clavate. Length (♀) 4.0 mm.; width 1.4–1.5 mm. Indiana. . . . **misellus** Lec.

10—Form slender, the size small, dark testaceous, the minute and dusky-cinereous hairs not very dense and not concealing the elytral punctures, which are relatively coarse though scarcely so large as in *punctatus* and smaller and feebler apically, separated by less than twice their diameters; antennæ (♀) very slender, dusky-testaceous, not maculate, the joints dark at their apices; prothorax short, nearly twice as wide as long, the sides oblique and straight from the spinose tubercle to the distinct apical angles; surface finely, closely punctulate, more strongly along the base, the two small anterior convexities feeble; elytra barely twice as long as wide, convex, the feebly elevated lines finely punctulate and more pubescent but inconspicuous, the penicillations and oblique fasciæ not very strongly defined; apices obliquely and very narrowly truncate, with only a trace of sinuation; two anterior femora short, distinctly though very moderately clavate, the posterior longer, thin, with only a feeble distal inflation, the legs nearly deep black throughout. Length (♀) 4.4 mm.; width 1.6 mm. Pennsylvania. . . . . **timidus** n. sp.

Form more elongate and more depressed, piceous-black in color throughout, the legs black; head with an unusually deep interantennal indentation; antennæ blackish, extremely slender, three-fourths longer than the body; prothorax unusually short when compared with the elytra, twice as wide as long, the sides moderately oblique and straight from the acutely prominent denticle to the obtusely prominent apical angles, densely and finely sculptured, with very obscure maculation and dusky pubescence; elytra rather more than twice as long as wide, slightly wider at three-fifths than at base, rounding behind at the sides to the oblique apical truncatures, which are barely at all sinuate, the angles obtuse; surface with moderate and not very close punctures, partially concealed by the dark fuscous vestiture, which is flecked, especially toward apex, with small spots of cinereous, generally in linear arrangement, the lines and fasciculi indistinct, the oblique fasciæ feebly marked except by their cinereous anterior margin; under surface deep black, cinereo-pubescent, the legs shining, the two anterior femora feebly clavate, the posterior gradually very feebly enlarged distally, not distinctly clavate; fifth ventral not quite twice as long as the fourth, with a distinct, broadly angulate emargination. Length (♀) 4.7 mm.; width 1.65 mm. New York (Bluff Point, Lake Champlain).

obscurellus n. sp.

11—Body less elongate, more oblong, more depressed and with the

minute cinereous vestiture only moderately dense, not concealing the punctures, which, on the elytra, are notably strong, deep, not dense but very clearly defined, also with unusually pronounced sexual differences in form, the female being larger and relatively much broader than the male and with more transverse prothorax, testaceous in color, the two anterior pronotal dark spots conspicuous, the posterior faded and ill-defined; elytra with the feebly elevated lines more densely cinereo-pubescent and distantly penicillate, the lateral black area slightly invading the disk, the oblique fasciæ broken and serrulate, by reason of a rounded black spot at about the middle of each and on the first discal line. Length (♂♀) 5.6–7.8 mm.; width 1.9–3.0 mm. New Jersey and Massachusetts (Framingham),—Frost. Originally described from Georgia.

cinereus Lec.

Body narrower, more elongate and relatively more convex, piceous in color, the elytral pubescence longer, coarser and very dense, concealing the punctures, dusky-cinereous in color; prothorax two-thirds wider than long, the spots small and obsolescent, the sides feebly oblique before, very strongly oblique behind, the spiniform tooth near the base; elytra finely, rather sparsely punctate, the scutellum and elytral bead, thence posteriorly to the middle, infuscate, the lateral cloud not invading the disk, the very oblique fasciæ narrow and more even, though largely composed of the three elongate black spots, one on each of the three raised lines or threads, the latter here very feeble though slightly marked by denser vestiture, the black penicillations very small and sparse. Length (♀) 6.2 mm.; width 2.2 mm. Indiana. [*lateralis* Hald.]..... **alpha** Say

12—Prothorax more or less nearly as in the *alpha* group preceding, strongly transverse, generally not much less than twice as wide as long..... 13

Prothorax much more elongate and relatively narrower, not much more than one-half wider than long; body larger and more convex.... 14

13—Oblique fasciæ of the elytra rectilinear, not broken submedially but as usual not attaining the flanks; body stout, densely clothed with short pale uniform ashy vestiture; color fusco-testaceous; prothorax nearly twice as wide as long, swollen at the sides, the swelling with an acute denticle at basal third, the three dark spots small, feebly convex; elytra parallel, obliquely and feebly arcuate at the sides in apical third, the narrow apices very obliquely and rectilinearly truncate, the elevated lines feeble, remotely penicillate; lateral dark cloud slightly invading the disk, the latter with a very feeble clouded fascia behind and parallel to the narrow black fascia, which is at apical third; femora moderately clavate, the posterior scarcely at all less so. Length (♀) 5.8 mm.; width 2.4 mm. District of Columbia..... **moderator** n. sp.

Oblique fasciæ very indistinctly marked, broad but suffused, interrupted and sometimes obsolete; body narrower and more depressed than in the preceding, the vestiture yellowish-cinereous and not so conspicuous as usual in this group, the raised elytral lines obsolete except

near the base and on the declivity, where they are sinuously cinereous, the black fasciculi feeble and sparse, stronger at base, especially on the first line; color obscure testaceous; antennæ rufous, mottled, the articular apices dark; prothorax twice as wide as long or very nearly, the three dark spots feeble, the two anterior slightly swollen, the sides subarcuately oblique before the minute and very acute spine at basal third, the apical angles rounded; elytra strongly and closely punctate, the sculpture partially concealed, the lateral dark cloud invading the disk to outer third; apices feebly oblique, straight, with broadly rounded external angles; femora strongly clavate, the posterior less so in the female. Length (♂ ♀) 4.8–5.4 mm.; width 1.7–2.0 mm. Texas (Brownsville).....**texanus** n. sp.

Oblique fasciæ strongly marked in the generally paler and denser cinereous field, but always widely broken submedially, the outer disconnected spot more advanced; body stouter, still more convex; integuments dusky rufous, black in the large lateral elytral spot, which invades the disk to outer third and on which the cinereous hairs are sparser, thus greatly accentuating the blackness of the spot; head feebly indented; antennæ rufous, mottled, the articular apices black, two-thirds longer than the body (♂) or one-half (♀); prothorax slightly less than twice as wide as long, the lateral projection at basal third large, dentiform, with a minutely acicular apex, the surface dull, the dark spots feebly defined, brown; elytra three-fourths longer than wide, the pubescence somewhat variegated, broadly and indefinitely whitish and more tawny, the elevated lines feeble, the fasciculate tufts small, black and rather numerous; punctures coarse but not dense; femora all rather strongly and subequally clavate in both sexes. Length (♂ ♀) 4.8–5.8 mm.; width 1.8–2.25 mm. Texas (Brownsville and Austin). The Austin examples are scarcely so stout and with relatively slightly smaller head and prothorax, differing subspecifically.....**houstoni** n. sp.

14—Body larger, stout, convex, densely clothed with cinereous hairs, shaded in certain areas with yellowish tint; integuments tawny-rufous, darker in the lateral elytral spot, where the hairs are only a little shorter and but slightly less dense than elsewhere; head feebly indented; antennæ nearly as in the preceding but longer, three-fourths longer than the body (♀); prothorax but little more than one-half wider than long, otherwise nearly as in the preceding, the three blackish spots not visible in the broad general mottling; elytra three-fourths longer than wide, the oblique fasciæ broken exactly as in *houstoni*, the lateral spot paler brown and invading the disk fully to outer third, the elevated lines distinct, with the fasciculi very minute, brownish-black and sparse; apical truncatures only feebly oblique, broadly and feebly sinuate, with sharply marked angles; punctures coarse, not close-set; under surface with dense and rather coarse cinereous and feebly, finely dappled vestiture, longer and coarser than in *houstoni;* two anterior femora more strongly clavate than in the female of *houstoni* but with the posterior relatively less clavate. Length (♀) 6.7 mm.; width 2.6 mm. Texas (Columbus).....**mimeticus** Csy.

In this genus the size of the body varies between wide limits in nearly all the eastern species, but seems to be more constant in the stout species, which have more nearly the general habitus of *Leptostylus biustus*. The three groups of eastern species allied to *punctatus*, *vicinus* and *alpha* are clearly delimited and appear to be well defined natural divisions. *Cinereus* is amply distinct from *alpha*, and in fact could not be termed closely allied to Say's species, either in habitus, sculpture or sexual divergencies of size and outline; the very oblique and strongly zigzag fasciæ and coarse, very conspicuous punctures of *cinereus*, will at once distinguish it; I received a good series from Mr. Frost. *Mimeticus* is by no means closely related to *crassulus;* a note which I made on inspecting the type of the latter species, reads that the tips of the elytra are rounded, which however possibly means that the narrow truncature is limited by rounded angles, and that the vestiture is very short, not as long as in *houstoni* or *mimeticus*. *Crassulus* has its type locality, in Lower California, very remote from that of the latter two species, the climatic conditions being wholly dissimilar. I cannot identify *divergens* Hald., who states that the prothorax has two diverging velvety lines, the oblique elytral fasciæ somewhat as in *alpha*, but with an abdomen darker than the sterna and "polished"; it is 4 mm. in length.

Leiopus minuens Ham. (Tr. Am. Ent. Soc., 1896, p. 123), of which I have four examples from the type locality, Lake Worth, Florida, is not by any means a *Leiopus* but a *Leptostylus*, though the smallest of the typical members of that genus, *parvus* being placed here above in another genus; the basal joint of the hind tarsi is short and of the *Leptostylus* type. Dr. Hamilton evidently mixed his material, for he states that the thoracic tubercles are "sometimes spinose, sometimes not." I have assumed that in the typical *minuens* the tubercles are very obtusely rounded, as they are in my four specimens, as well as in *Leptostylus biustus* and other similar forms. *Leiopus schwarzi* Ham. (l. c., p, 124), is possibly also a *Leptostylus*, or more properly, perhaps, because of the more pointed thoracic tubercles, allied to *Astylidius parvus* Lec. I can form no idea of *Leiopus floridanus* Ham., published (l. c.) as a variety of *alpha*, but in all probability incorrectly.

Lepturges Bates.

In North America and the neotropics, to which regions it is confined, this genus is a very large one and naturally includes at present some discordant elements, as shown principally by the form of the body, nature of the thoracic spines, which however are always small acute and more or less near the base, and the form of the femora. In the more typical species of the genus, the hind femora, at least, are never abruptly or strongly clavate in either sex. Our species, as in the case of *Leiopus* and *Hyperplatys*, are somewhat more numerous and structurally diversified than hitherto supposed; those represented in my cabinet may be known as follows:

Body more elongate and of larger size, the hind femora lineiform in both sexes 2

Body shorter, small in size, the hind femora clavate as a rule, feebly in the female; antennæ hair-like in tenuity 5

2—Lateral thoracic spine basal, the hind margin subtransversely, broadly and feebly sinuate from the tips of the spine to the transverse median parts of the base 3

Lateral spine more abruptly formed, less basal, defined posteriorly by a less transverse and deeper sinus 4

3—Form stout, larger than usual, obscure testaceous, very densely and conspicuously clothed with fine even and pale cinereous pubescence, variegated with blackish-brown spots; head feebly indented, the eyes more deeply emarginate than in *confluens;* antennæ subsimilar, very pale and uniform, three-fourths longer than the body (♀); prothorax more trapezoidal, rather more than one-half wider than long, the converging sides nearly straight, feebly undulate medially, rounded at apex, which is much narrower than the base; surface even, except a feeble transverse subbasal impressed line, ornamented with four small elongate spots medially, two near the apex and two subbasal, forming a parallelogram, also with a small brown point near the basal angles; punctures fine and sparse; elytra slightly more than twice as long as wide, more parallel, the sides rounding more abruptly, though broadly, posteriorly to the apices, which are strongly and evenly rounded; punctures fine and sparse, the dark maculation nearly as in the following but wanting near the scutellum, the two elongate coalescent spots behind the middle ashy, except about their peripheries; last dorsal segment flat, tapering, with straight sides and arcuato-truncate apex, projecting distinctly behind the elytra, and not even with the elytral tips and narrowly rounded at apex as it is in *confluens.* Length (♀) 7.7 mm.; width 2.4 mm. Texas (Austin). A single female taken by the writer many years ago ..... **canus** n. sp.

Form nearly as in the preceding, but not so stout and with the minute cinereous vestiture much more completely replaced by more comminuted spots of brown; head indented; antennæ much less pallid

than in the preceding, very slender; prothorax barely one-half wider than long, feebly trapezoidal, the apex but little narrowed, the dark maculation normally forming four very large, more or less confluent spots, the depression near the basal angles also dark; elytra more elongate, much more than twice as long as wide, subparallel, very gradually and arcuately narrowing behind the middle to the broadly obtuse and rounded apices, which are relatively very much broader than in *canus*, the punctures fine, sparse; dark maculation having nearly the same form and extent as in the following species, but variegated and more comminuted with ashy hairs; last dorsal segment (♀) projecting distinctly behind the elytra, flat, with its apex rounded, but less rapidly cuneate than in *canus*. Length (♂♀) 5.7–7.2 mm.; width 1.7–2.2 mm. Atlantic regions. [*angulatus* Lec.].
confluens Hald.

4—Form elongate, rather depressed; color dark umber, clothed rather densely with extremely short fusco-cinereous pubescence, variegated with darker linear spots, the dark areas of the elytra solid and not partially ashy as they are in the preceding; antennæ dark luteo-testaceous; prothorax shorter, more or less trapezoidal, with feebly undulating sides, rounding apically, two-thirds to three-fourths wider than long, very indefinitely variegated; elytra subparallel, the sides gradually rounding and converging posteriorly to the strongly rounded apices, much more than twice as long as wide, the spots large, one oblique from the middle of the base toward the suture behind the scutellum, one lateral and irregular from the humerus, expanding posteriorly irregularly, this area sometimes attaining the suture behind the middle, thence narrowing to the external margin near the apex; last dorsal (♀) narrowly parabolic, not extending behind the elytra. Length (♂♀) 6.2–7.2 mm.; width 1.8–2.2 mm. New York, Indiana and Ontario. [*pictus* Lec.].
symmetricus Hald.

Form elongate, feebly flattened above, pale rufo-testaceous in color throughout and with the vestiture so minute and fusco-cinereous as to be scarcely visible; head deeply indented; antennæ slender, concolorous, three-fourths longer than the body (♂), nearly similar (♀); prothorax trapezoidal, three-fifths wider than long, the spine much before the base, barely behind basal third, strong and sharply pointed; surface feebly impressed along the base laterally, finely, sparsely punctate, almost impunctate anteriorly, the vestiture not at all concealing the surface, not variegated; elytra distinctly cuneiform (♂), broader and nearly parallel (♀), the sides broadly arcuate, slightly more converging posteriorly to the narrowly and transversely subtruncate apices, the angles rounded; surface convex along the sides above the flanks, flat discally, with a large broad and feeble convexity near the base of each and nearly obsolete in the female, the punctures strong, moderately close, becoming wholly obsolete at apex; vestiture not at all concealing the surface, uniform, there being only an easily denuded minute discal spot of ashy hairs at basal fifth and a feeble oblique ashy discal streak near apical fourth; color nearly uniform but becoming gradually infuscate posteriorly;

sutural beading strong, obsolete basally; last dorsal (♀) projecting very slightly behind the elytra, broad, feebly cuneate, the apex broadly and feebly bilobed. Length (♂♀) 6.2–8.0 mm.; width 1.8–2.7 mm. Mexico (Durango City),—Wickham. *__subglaber__ n. sp.

Form moderately elongate, feebly, subevenly convex, fuscous, densely clothed with uniform ashy pubescence, spotted with black; head deeply indented; antennæ very pale and uniform luteo-flavate, slightly more than twice as long as the body; prothorax feebly trapezoidal, two-thirds wider than long, the spine well in front of the base, strong and very aciculate at tip; surface with four large circular spots, forming almost a square, the sides black at the middle; elytra parallel, rounding more rapidly at the sides posteriorly, the apices narrowly subtruncate, not at all prolonged; surface with the fine sparse punctures virtually concealed by the dense cinereous hairs, each with a large subcircular and clearly defined spot of black medially near the base, two in oblique line near basal fourth, one just outside the median line a little behind the middle and another nearer the median line at apical fifth; femora testaceous, black in about apical half, the tibiæ and tarsi nearly black; under surface blackish, broadly pale along the median line throughout; basal joint of the hind tarsi nearly one-half longer than the entire remainder. Length 6.5–6.8 mm.; width 2.0–2.2 mm. Indiana and Ohio.

__regularis__ Lec.

5—Elytral apex not black.....6

Elytral apices black, the tips not prolonged; post-median fascia broad and transverse.....11

6—Post-median fascia of the elytra narrower and more oblique, its inner limit distant from the suture and strongly oblique.....7

Post-median fascia much broader, transverse, either crossing the suture or with its inner edge parallel and very close thereto; tips not prolonged.....10

7—Elytral tips prolonged posteriorly to a slight degree, rounded or subtruncate with rounded angles, antennæ two and a half to three-fourths times as long as the body.....8

Elytral tips not prolonged, obliquely recti-truncate, with distinct but not prominent angle; antennæ fully three times as long as the body or more.....9

8—Outline narrow and elongate, pale luteo-flavate in color, the dark maculation rather pale brown; cinereous vestiture fine, moderately dense, becoming brown and very inconspicuous on the apparently denuded darker areas; head feebly indented, the antennæ pale luteous; prothorax one-half (♂) to three-fourths (♀) wider than long, very feebly trapezoidal, the spine strong, posteriorly oblique as usual, far from the base and between basal third and fourth, infumate, not maculate, minutely, densely punctulate, with stronger punctures along the base; scutellum pale; elytra fully twice as long as wide, slightly shorter in the female, somewhat strongly but not densely punctate, closely and deeply at the sides, the line of flexure not cariniform though distinct; maculation consisting of a subbasal discal spot, a larger post-humeral marginal one, with a feebler discal

parallel line and a smaller one near the suture, a sharply arcuate transverse post-medial fascia, more or less expanding at the margin, extending nubilously to the tip and a small discal spot near the apex, the apices separately strongly and evenly rounded; femora strongly clavate, the posterior less so, especially in the female, though very evidently also in the latter; under surface pale, infumate narrowly along the sides. Length (♂♀) 4.6–6.2 mm.; width 1.4–2.0 mm. New York, Ohio, Ontario and District of Columbia. . . **signatus** Lec.

Outline much narrower, smaller and even narrower than *signatus*, much darker, black or nearly so, the under surface broadly pallescent along the middle, the femora at base and the tibiæ, except distally, feebly picescent, the tarsi black, the first joint of the posterior (♂) scarcely so long as the remainder, shorter than in the preceding, where it is paler and equal to the remainder, the prothorax (♂) feebly trapezoidal, much shorter than in the same sex of *signatus*, very transverse, fully three-fourths wider than long, the strong oblique spines at basal third; disk densely punctulate, not maculate; elytra fully twice as long as wide, gradually feebly and arcuately tapering behind to the apices, which are barely at all prolonged and broader and more obtuse than in the preceding species and evenly rounded; maculation very indistinct on the blackish ground, which is loosely clothed with short fine dusky-cinereous hairs, of the same style as in *signatus* but more developed; punctures similarly strong but more evident; femora all clavate. Length (♂) 5.0 mm.; width 1.5 mm. New York (Bluff Point, Lake Champlain).

tenebrosus n. sp.

9—Body very much shorter, relatively stouter and more convex than in the preceding section, rufo-piceous, the ground of the elytra densely covered with short cinereous vestiture, the maculation pale brown, with certain points more blackish; antennæ very long, extremely tenuous; prothorax transverse, feebly trapezoidal, the sides more rounding at apex than usual, the spine at basal fourth; surface with two nubilous vittæ expanding anteriorly; elytra only three-fourths longer than wide, parallel, rounding rapidly behind, finely, rather sparsely punctate, not densely on the flanks, which are rather shallow and with very broadly obtuse line of flexure, the basal spot large, quadrate, inclosing a small cinereous point and joining the black humeri, the latter spot gradually evanescent along the margin but adjoining an oblique discal series of three nubilous spots at and near basal third, the inner near the suture; a sharply arcuate more blackish fascia behind the middle expands externally but comes far from reaching the margin and the oblique inner ramus is faint and near the suture; behind this there are three oval faint spots forming a subapical triangle; legs shorter than usual, the two anterior femora strongly clavate, the posterior slender, not clavate; tibiæ and tarsi much shorter, the basal joint of the posterior much shorter than the remainder. Length (♀) 4.2 mm.; width 1.5 mm. Texas (Brownsville),—Wickham. . . . . **celtis** Schf.

10—Form (♀) notably short as in the preceding, blackish, the elytra a

little paler, the maculation umber brown; cinereous pubescence of the elytral ground only moderately dense, of the pronotum finer and less obvious as usual; antennæ (♀) about two and three-fourths times as long as the body, very tenuous; prothorax (♀) two-thirds wider than long, with two broad nubilous vittæ enlarged anteriorly and sometimes almost resolved into four large spots, the spine just behind basal third; elytra (♀) not more than two-thirds longer than wide, rather finely, sparsely punctate, strongly and closely externally, with a common transverse dark spot just behind the humeri, narrowly prolonged posteriorly along the suture, a large post-humeral area on the flanks, extending onto the disk, where it is truncated and paralleled by two elongate spots in oblique line, the post-medial dark spot very large, irregularly subquadrate, attaining but not crossing the paler brown sutural beading, divided near the external margin; between this and the apex there is a single rather large discal spot; femora (♀) moderately clavate, the posterior slender, not clavate; pale hind tarsi with the basal joint rather longer than the entire remainder, the legs normally slender and longer than in *celtis*. Length (♂♀) 3.6–4.6 mm.; width 1.0–1.5 mm. New York to Wisconsin..... **querci** Fitch

Form narrow and elongate, feebly convex, deep black throughout, the coxæ and femoral bases rufo-piceous; cinereous vestiture whitish, dense as usual, much finer and less distinct on the prothorax; head small, indented; antennæ (♀) two and one-half times as long as the body, very tenuous, obscure testaceous; prothorax as in the female of *querci;* elytra narrower and much more elongate, twice as long as wide, narrowing rather rapidly behind to the narrowly subtruncate apices, the punctures small and sparse, coarser and dense on the flanks, the maculation deep black as in *querci*, except that the post-median fascia is very broad and more even from the suture to the margin and two-fifths as wide as the entire length of the elytra, along the margin prolonged nubilously to the apex, where it adjoins a very small feeble discal spot; last dorsal not appearing behind the elytra; legs normally long, the two anterior femora feebly clavate, the posterior linear, not clavate; tarsi shorter but very slender, the basal joint of the posterior barely longer than the remainder. Length (♀) 4.0 mm.; width 1.35 mm. Pennsylvania (Buena Vista Spring, Franklin Co.)..... **tristis** n. sp.

11—Body smaller than in any of the preceding species, not very slender, black or piceous, the pubescence as usual whitish; prothorax shorter, twice as wide as long, the spine strong, before basal fourth, the disk not clearly maculate; elytra less than twice as long as wide in both sexes, with a transverse common post-scutellar and humeral spot, sometimes united, a small marginal spot behind the humeri and obliquely prolonged discally for a short distance and a very broad entire transverse fascia just behind the middle, separated from the broadly and solidly black apex by a narrower transverse pale fascia; there is also a small sutural macula before the middle, representing the two small inner spots of the oblique series in the *querci* group;

femora (♂) all strongly clavate, or (♀) the anterior two moderately, the posterior not, clavate; legs rather short. Length (♂♀) 2.7–3.5 mm.; width 0.8–1.2 mm. District of Columbia, Illinois and Wisconsin.....**facetus** Say

Tenebrosus differs from *signatus* in its more slender form, blackish coloration, more narrowly attenuate elytral apices and in other features. Of the *querci* group, *celtis* is very distinct in its obliquely truncate elytral apices and much shorter legs, among other characters; *tristis* is distinct in its much more elongate form, being even more slender in the female than the male of *querci*, also in its intense black color and the very broad post-median elytral fascia, which is even relatively broader than in *facetus*. Some errors relating to the identity of *angulatus* and *pictus* Lec., and *symmetricus* and *confluens* Hald., are rectified in the table; *pictus* was separated from *angulatus* because of the distinctly less basal thoracic spine and is plainly the species described by Haldeman, under the name *symmetricus*, while the *angulatus* of LeConte is evidently the same as *confluens* Hald., which was placed as a variety of *symmetricus* by Haldeman and apparently overlooked by LeConte.

Valenus Csy.

This genus is somewhat allied to *Lepturges* but is of very much broader form of body and with less narrowly separated coxæ, the intermediate being separated by a third of their own diameter; it is also widely separated by the form of the tarsi, which are broad and subinflated, the first joint of the posterior being not quite three times as long as wide, expanded at apex and narrowed toward base, barely longer than the next two joints combined, the second quadrate, not quite as long as wide. The claws are very small, divaricate, the femora all strongly clavate in the type, and the flanks of the elytra are separated from the feebly convex upper surface by an obtusely angulate line of flexure, obsolete basally; the elytra throughout have long sparse erect bristle-like hairs; the thoracic spines are very small and less basal then in *Lepturges*, being exactly at basal third. The antennæ are shorter and less tenuous than in that genus and the outer joints gradually diminish in length; they are, in the assumably male type, but little more than one-half longer than the body. *Valenus* is also allied to the neotropical *Chætanes* Bates, but is not identical with that genus.

Hyperplatys Hald.

In the globular, prominent and more or less narrowly separated coxæ, this genus conforms well with the other genera of the *Leiopus* group, but the upper surface is here flatter than in any of the others and is separated from the flat and feebly inflexed flanks* by a sharply marked and often prominently cariniform line of flexure. The style or type of ornamentation is also wholly different from either *Leiopus* or *Lepturges;* so there can be no doubt that the genus is valid, and not a synonym of *Leiopus* as stated in the Munich catalogue. The neotropical genus *Anisopodus* is also allied rather closely to *Hyperplatys*, and the species described by Bates under the names *Anisopodus argus*, *pardalis* and *pusillus* are evidently *Hyperplatys* rather than *Anisopodus*, the last two without the least doubt; *argus*, however, would be by far the largest known species, and, in view of its extreme southern habitat, may prove to be different, although it seems to have very nearly the same type of ornamentation. In fact Bates himself, who had previously overlooked *Hyperplatys*, presumably because of the Munich catalogue synonymy, states later on, under *pardalis* that that species at least might with equal propriety be placed in *Hyperplatys*.

The femora are always strongly clavate in the male and sometimes very strongly so in that sex and less clavate, though mutually subequally so in the female, but in one species, of isolated habitat and distinct appearance—*californica* Csy.,—the hind femora of the female become linear, or at least non-clavate, as in most forms of *Lepturges*. The elytral apices are always narrowly, very obliquely and deeply sinuato-truncate, with the outer angles prolonged posteriorly, sometimes, as in the notably aberrant *femoralis* of Haldeman, becoming finely aciculate and very prominent. The thoracic spines are as in *Lepturges*, though smaller, more abrupt and more aciculate. The basal joint of the slender hind tarsi is always very elongate, generally longer—especially in the male,—though sometimes a little shorter in both sexes, than the remainder. The antennæ are twice as long as the body or more and finely capillary.

*Not "epipleura," as written by Bates; the true epipleura, as so well developed for instance in Coccinellidæ, being a very different structure from the deflexed to feebly inflexed flanks, even when divided from the upper surface by a prominent line as here and also in many Tenebrionid genera.

The species of *Hyperplatys* are really very numerous, though at present almost wholly undifferentiated in collections, because of the comparative uniformity of maculation; those which are definable in my own collection may perhaps be recognized by the following statement:

Species of the Atlantic regions and westward to the Rocky Mountains; femora all clavate, rather more strongly in the male, the posterior relatively more or less visibly less so in the female.....2

Species of the true Pacific coast fauna; femora all clavate, except the posterior of the female, which are slender and not clavate.....15

2—Elytra sparsely speckled with spots, generally black but brown in *maculata*, and having on each a larger discal spot between posterior third and fourth.....3

Elytra with spots of black, rather uniformly distributed throughout and without trace of a larger discal posterior spot; middle coxæ separated by a third of their width to rather less than a fourth; basal joint of the hind tarsi longer than the remainder.....13

Elytra uniformly dull smoky-black; middle coxæ separated by about a third of their width; basal joint of the hind tarsi shorter than the remainder.....14

3—Middle coxæ very approximate, separated by barely a fifth of their own width.....4

Middle coxæ less close, separated by a third of their width more or less.5

Middle coxæ unusually distant, separated by rather more than one-half of their width.....12

4—Body of exceptional form, stout but with relatively much narrower head and prothorax, in this respect somewhat as in *femoralis*, pale testaceous; legs dull black, the femora bright rufous to beyond the middle; ground vestiture consisting of small stout and closely decumbent ashy hairs, not very densely placed; head dull, with a fine entire medial stria, much narrower than the prothorax, the antennæ long, slender, pale; prothorax four-fifths wider than long, subparallel, the spine aciculate and before basal fourth; punctures strong and unusually close-set, the middle two of the four brown circular spots large; elytra short, three-fourths longer than wide, parallel, rounding and narrowing obliquely in apical third, the outer angle of the apex dentiform, acute; humeri unusually angulate and widely exposed at base; surface unusually coarsely, deeply but not densely punctate, a little more closely on the more shining flanks, which are uniformly rufous; spots large, circular, brown, the posterior discal relatively small, obliquely linear; legs well developed, the femora (♂) very strongly clavate, the posterior notably longer than the others, approaching *Anisopodus;* fifth ventral scarcely as long as the fourth, broadly rounded. Length (♂) 4.8 mm.; width 1.8 mm. Pennsylvania.....**maculata** Hald.

5—Basal joint of the hind tarsi distinctly shorter than the remainder. Body moderately stout, subparallel, feebly convex, the carina at the line of flexure of the elytra strong; color pale brown, closely covered

with small decumbent ochreous hairs; front short, densely, evenly punctate and dull, the median line very obsoletely impressed; antennæ (♀) testaceous, the scape black, the joints black toward apex, two and a third times as long as the body; prothorax very transverse, more than twice as wide as long, much wider than the head, distinctly narrower than the elytra, the sides feebly subangulate at the middle, thence straight and oblique to the apex, the spine narrow, acute, abruptly spiculiform, at basal fourth; surface strongly, moderately closely punctate, the four black spots as usual; elytra not quite twice as long as wide, parallel, rounding obliquely behind, the apical angle acutely dentiform, the humeri rounded; surface with well separated moderate punctures, coarser and close on the clouded flanks; spots deep black, sparse and moderate in size, becoming much larger and subconfluent behind the larger discal spot, each elytron with the two slightly elevated discal lines of denser and paler hairs very distinct; legs moderate. Length (♀) 4.7 mm.; width 1.65 mm. Rhode Island (Watch Hill),—Wirt Robinson.
lentiginosa n. sp.

Basal joint as long as the remainder or longer, especially in the male. .6

6—Interspaces between the pronotal punctures smooth and highly polished and also with a regular system of minute clear-cut punctulation; elytra uneven. Outline moderately stout and subparallel, feebly convex, black or feebly picescent, the flanks rufescent; legs black, the femora pale rufous except apically; pubescence close, minute as usual and cinereous; front slightly shining, broad, the fine stria obsolete anteriorly, the punctulation fine and dense; antennæ (♂) black throughout, two and three-fourths times as long as the body; prothorax broad, fully twice as wide as long, the spicule rather long and slender, at basal fifth or sixth; sides arcuate, oblique anteriorly; surface mostly denuded in the type but finely, sparsely punctate, with a small feeble convexity at each side of the middle anteriorly, on which the punctures are wanting; elytra slightly though evidently wider than the prothorax, short, three-fifths longer than wide, parallel, obliquely rounding at the sides posteriorly, the angle dentiform but with its apex rather blunt; surface broadly, transversely depressed near basal third and each with traces of two fine and feebly elevated lines medially, moderately but unusually closely punctate, very closely so toward base, the spots moderate, unevenly distributed, the posterior spot transverse, attaining the acute but scarcely cariniform line of flexure, the flanks uniformly dull rufous, strongly and closely punctate; femora strongly clavate. Length (♂) 5.0 mm.; width 1.9 mm. Colorado (Boulder Co.).....**montana** n. sp.

Interspaces finely and feebly, confusedly rugulose and less shining; elytral surface even.....7

7—Front not evenly, very densely punctate and dull as in *lentiginosa* but shining, with the punctures simple, not dense and at most feebly asperate, the interspaces smooth. Body unusually stout, fuscous, paler and rufescent on the flanks, black beneath, the vestiture fine, close, dusky-cinereous; legs blackish-piceous, the

extremely clavate femora red in basal half or less; head rather large, though narrower than the prothorax, strongly, transversely grooved behind the antennal prominences, the antennæ (♂) dusky-testaceous, black at base, the outer joints black distally, barely twice as long as the body; prothorax not quite twice as wide as long, much narrower than the elytra, the very oblique spicules near basal fourth; punctures not coarse but very deep, rather close, the rounded black spots moderate; surface even and with an impunctate flat line basally; elytra three-fifths longer than wide, the sides very feebly converging from the rounded and broadly exposed humeri, rounding and converging in apical third, the angle dentiform, moderately acute; line of flexure acutely defined but not cariniform; punctures moderate, somewhat close-set, very close and deep on the flanks, the outer of the elevated lines alone visible and only medially, spots rather large, sparse, the posterior spot discal, transversely oval; fifth ventral (♂) not distinctly longer than the fourth, broadly truncate, the truncature distinctly sinuate medially. Length (♂) 5.8 mm.; width 2.2 mm. Indiana.....**robustula** n. sp.

Front more or less densely granulose and rugosely punctate, in a manner very different from the preceding or in *lentiginosa*.....8

8—Form narrower and more parallel, the prothorax but very little narrower than the elytra. Blackish, the flanks barely at all less so, the legs dull black, the femora pale basally; vestiture close, whitish-cinereous, the denser lines of the elytra distinct except basally but not elevated; head well developed, feebly transversely indented; antennæ (♂) twice as long as the body, rufous, black at the articular apices, the scape black; prothorax not quite twice as wide as long, the spicules short, at basal fifth; sides broadly angulate at the middle, thence rather strongly oblique to the apex; surface finely, rather sparsely punctate, with a large feeble rounded tumor at each side of the median line before the middle, the interspaces finely, transversely strigilate, the spots rather small; elytra not quite twice as long as wide, of the usual outline, the apical angle dentiform, moderately acute, the line of flexure strongly cariniform; punctures small, rather sparse, well separated even on the flanks, the spots moderate, sparse, posterior attaining the carina in the type; femora moderately clavate. Length (♂) 4.8 mm.; width 1.65 mm. Iowa (Keokuk).....**amnicola** n. sp.

Form moderately stout, less parallel, the prothorax always notably narrower than the elytra.....9

9—Median line of the pronotum carinate from before the middle to basal fourth. Body smaller than in any other species and less stout, with smaller head, the front very densely, granularly rugose throughout and dull; color piceo-rufous, the vestiture cinereous, minute, not dense; antennæ pale rufous, the articular apices black, the scape piceous; prothorax short, very nearly twice as wide as long, the spicule near basal fourth; surface bitumorose somewhat as in the preceding, finely but strongly, not densely punctate, broadly concave basally throughout the width; elytra three-fourths longer than wide, of the usual form, the punctures fine, rather sparse, coarse and close

on the flanks, which are blackish though paler posteriorly, the line of flexure finely cariniform; two discal lines not visible, the black dots sparse and small, the posterior spot transverse, attaining the carina in the type; legs rather short, the femora moderately clavate. Length (♂) 3.7 mm.; width 1.35 mm. Rhode Island (Boston Neck). **delicata** n. sp.

Median line of the pronotum not definitely carinate 10

10—Prothorax with pronounced and rather prominent though obtuse apical angles, standing far our laterally from the fine apical beading. Body small in size, rather stout, blackish, with the vestiture dark and not dense, ochreo-cinereous in color; head very strongly and densely micro-granulose and dull, strongly indented, the antennæ (♀) not very pale, unusually short, three-fourths longer than the body; prothorax unusually short, twice as wide as long, the spicules standing out almost perpendicularly near basal fifth, the sides subangularly prominent at the middle; surface evenly convex, the black spots not tumid, the punctures fine, rather sparse; elytra short, three-fifths longer than wide, rather strongly and closely punctate, the line of flexure carinate, the flanks black or nearly so, rufescent at the lower margin, strongly, densely punctate; discal lines feebly evident, not elevated, the black spots small, scattered, the posterior spot transverse, usually attaining the carina; hind femur (♀) slender, only feebly but rather abruptly clavate at the distal extremity. Length (♀) 4.2 mm.; width 1.5 mm. Pennsylvania ..... **nigrella** Hald.

Prothorax with the apical angle still more obtuse and notably less prominent; body larger 11

11—Form moderately stout, blackish-piceous, the elytral flanks rufescent; head rather small, much narrower than the prothorax in both sexes, indented, feebly grooved between the antennæ, the latter distinctly more than twice as long as the body in both sexes, differing but slightly sexually, pale except the articular apices, the scape blackish; prothorax twice as wide as long, nearly similar sexually though broader in the male, the sides unusually prominent medially, thence strongly oblique to the apex, the spicules small, at basal fifth; surface broadly concave along the base, moderately punctate, the medial black spots distinct and slightly tumid, the lateral often wanting; elytra nearly four-fifths longer than wide, of the usual outline, the carina sharply marked, the discal lines unusually distinct but not elevated; punctures moderate, widely separated, the black spots rather large, especially in the female, somewhat numerous, the posterior spot isolated, rounded; femora clavate, nubilously rufous basally, the fine pubescence dense, the posterior (♀) distinctly clavate distally; fifth ventral (♂) subtriangular, longer than the fourth, narrowly truncate at tip. Length (♂♀) 4.7–5.0 mm.; width 1.7–1.83 mm. Indiana and New York (Catskill Mts.). **cryptica** n. sp.

Form broader, the color paler, testaceous, clothed with cinereous pubescence; head distinctly larger, rather strongly canaliculate along the median line; antennæ long as in the preceding but with the basal

joint not black but only slightly browner, two and one-half times as long as the body (♂), or but little more than twice as long (♀); prothorax less transverse, otherwise nearly similar, except that the spicules are much less minute and the sides before them less oblique, the spots small, feebler and brownish; elytra broader, two-thirds to three-fourths longer than wide, otherwise similar, except that the punctures are rather closer, the pale lines less distinct and the spots smaller, the posterior larger, broadly truncated at the carina, the apical angles dentiform, not very acute; flanks in great part blackish, coarsely, very deeply and densely punctate; under surface rufous, the femora rather strongly clavate, only a little less so in the female, the posterior (♀) distinctly clavate though rather gradually so and much less abruptly than in *cryptica;* fifth ventral (♂) longer than the fourth, the apical truncature much broader than in the preceding. Length (♂ ♀) 4.5–5.6 mm.; width 1.4–2.0 mm. District of Columbia and Indiana.....**variolata** n. sp.

Form nearly similar but blackish, the elytra feebly rufescent, the under surface wholly deep black; legs black, the tibiæ palish basally, the femora feebly rufescent toward base; vestiture as in the preceding, cinereous-white; head smaller, nearly as in *cryptica*, indented and striate; antennæ similar but with darker scape, not quite so long as in *variolata;* prothorax nearly similar but much more distinctly exceeding the head in width; elytra nearly similar but flatter and with the carina along the line of flexure very strong, sometimes prominent, the two denser whitish lines distinct; punctures rather strong and close-set, the black spots and posterior macula as in *variolata;* flanks blackish throughout, very closely and strongly punctate; femora rather strongly clavate; fifth ventral (♂) nearly as in *cryptica.* Length (♂) 4.0–5.5 mm.; width 1.7–2.0 mm. Maine (Monmouth),—C. A. Frost.....**frigida** n. sp.

12—Form oblong, moderately stout, depressed, the lateral elytral carina fine and prominently elevated; color blackish, the elytra piceous throughout; pubescence close, minute, fusco-cinereous; under surface and legs black, the femora rufo-piceous at base; head indented, opaque; antennæ (♀) almost twice as long as the body, infuscate, the scape black; prothorax twice as wide as long, prominently rounded medially at the sides, which are thence oblique to apex and base, the sides of the apex swollen; spicule straight, acute, projecting perpendicularly from the oblique side at basal fifth; surface finely, rather closely punctate, dull, the median dark spots well developed but not tumid; elytra twice as long as wide, parallel, arcuately oblique posteriorly, dehiscent at apex, the external angle dentiform; surface with moderate and well spaced punctures and very small scattered spots of black, the posterior macula large, oval, truncated by the carina; two discal paler and denser lines evident; flanks closely pubescent; strongly, rather closely punctate; hind femora distinctly clavate apically though rather slender. Length (♀) 6.0 mm.; width 2.0 mm. New York..**binocularis** n. sp.

13—Form oblong, depressed as usual, black, the elytra dull rufous, clothed moderately densely with fine fusco-cinereous pubescence; under

surface and legs black, the tibiæ and femora pale basally; head, prothorax and elytra increasing equally and moderately in width, the antennæ dull rufous, variegated with black as usual, the scape black, twice as long as the body (♂) or a little less (♀); prothorax short and transverse, two-thirds (♂) to once (♀) wider than long, almost parallel, swollen feebly at the sides medially, the spicule acute, near basal fifth; surface dull, finely, not densely punctate, the four spots well developed, not tumid; elytra parallel, rounding at the sides behind, the angles dentiform; lateral carina sharp but not elevated; surface sparsely, moderately punctate, the black spots irregularly distributed, large, equal and circular, the ashy discal lines wholly obsolete; flanks rufescent, strongly and closely punctate; femora strongly clavate, the posterior of the female more slender but distinctly clavate; fifth ventral (♂) slightly longer than the fourth, rounded, the apex rather narrowly and feebly truncate. Length (♂ ♀) 4.2–5.5 mm.; width 1.4–1.9 mm. Indiana and New York (Lake Champlain). The New York example has much darker plumbeous vestiture.....**aspersa** Say

Form more rhomboidal, not very stout, feebly convex, infuscate, the elytra not paler except on the flanks; under surface and legs dull rufous, the femora and tibiæ black distally, the tarsi blackish; vestiture of small decumbent hairs even, fusco-cinereous, not very dense; head indented, opaque, rather small, the prothorax broader but with the difference less notable than that between the prothorax and elytra; antennæ (♂) as in *aspersa* but longer, two and one-half times as long as the body; prothorax two-thirds wider than long, prominently rounded at the sides medially, the sides thence oblique to apex and base, the sides of the apex rounded, not tumid; spicule acute, just behind basal fourth; surface concave along the base, somewhat shining, finely, not densely punctate, the four dark spots not tumid; elytra much wider than the prothorax, with widely exposed and rounded humeri, rather strongly cuneiform, with straight sides, feebly rounding apically to the acute and subspiniform angles; surface strongly, moderately closely punctate, the punctures tending to very irregular lineal arrangement, the black spots very small, sparse, uniform; discal lines very feeble; lateral carina fine and very acute, somewhat elevated; flanks coarsely, very deeply and densely punctate basally, rather finely and less closely apically; femora strongly clavate; fifth ventral (♂) longer than the fourth, rather narrowly rounded, the apex narrowly subtruncate, the fourth segment broadly and very feebly sinuate. Length (♂) 5.3 mm.; width 1.7 mm. District of Columbia.....**vigilans** n. sp.

14—Body very stout, feebly convex, flattened medially, dull black, the very minute and rather loose vestiture blackish-brown and uniform, more cinereous but extremely minute beneath and on the legs; under surface black, the legs black, the tibiæ feebly picescent basally, the femora bright red in basal half or more; head well developed, dull black, the antennæ (♀) dull black throughout and slightly less than twice as long as the body; prothorax barely more than one-half wider than long, slightly wider than the head and very

much narrower than the elytra, almost parallel, the sides feebly prominent medially, the spicule strong, near basal fourth; surface dull black, rather finely but very deeply and densely punctate; elytra broadly cuneiform, three-fourths longer than wide, with very widely exposed and slightly rounded humeri, within which the surface is somewhat impressed, the sides just visibly sinuate for a short distance behind the humeri, thence converging and feebly arcuate, then gradually more strongly to the apical angle, which is produced and spiculiform; surface uniform in sculpture and vestiture but flat medially and, except basally, sloping at the sides to the lateral carina, which is very finely acute and subprominent; punctures strong but not very coarse and notably close-set; flanks more shining, strongly and closely punctate and picescent; femora clavate, the posterior (♀) more slender though rather distinctly clavate distally. Length (♀) 5.9 mm.; width 2.25 mm. Florida. **femoralis** Hald.

15—Elongate, subparallel, dark testaceous, clothed throughout very densely with conspicuously pale cinereous-white pubescence; head well developed, indented; antennæ testaceous, blackish apically, the scape sometimes piceous, twice as long as the body (♂) or a little less (♀); prothorax subsimilar in the sexes, about three-fourths wider than long, subparallel, the spicule rather strong, at basal fifth; surface densely cinereous, the sculpture concealed, the four black spots well developed; elytra three-fourths longer than wide, the punctures strong and rather close when exposed but normally entirely concealed by the vestiture, the spots of blackish tint small, occasionally subobsolete, scattered, the posterior discal spot relatively very small and sometimes wanting; lateral carina fine, rather prominent; apical angles dentiform, somewhat blunt; flanks moderately punctate, closely so, the cinereous vestiture distinct but less dense than above; male with the hind legs rather long, approaching *Anisopodus*, the fifth ventral equal in length to the preceding, broadly rounded, with a feeble and moderately narrow apical sinuation. Length (♂♀) 5.0–6.3 mm.; width 1.8–2.35 mm. California (Sta. Cruz Mts.)..... **californica** Csy.

Maculata Hald., is a very peculiar species, universally misidentified in collections; it is probably of very local distribution on the eastern Appalachian slopes; *nigrella* Hald., is also a distinctly characterized form, not of wide dispersal; in fact most of the species seem to be narrowly circumscribed in habitat and, although the Catskill example of *cryptica* described above is very similar to the Indiana exponents, there is a certain quality in the vestiture which may indicate a difference, racial or otherwise. The three species *variolata*, *cryptica* and *frigida*, of the above table, are mutually allied and, although easily differentiable on inspection, do not have any marked structural differences that can be expressed

very convincingly. In *variolata* the head is relatively larger than in the other two, and *frigida* is blacker, as well as shorter and broader in form; other divergencies may be inferred from the descriptions. In *lentiginosa* the shorter basal joint of the hind tarsi is doubtless due to some extent to the female sex of the type and in the male it is probably a little longer; but this species is very distinct in vestiture, maculation and in other features.*

Urographis Horn.

We now come to a part of the series in which the genera are confused, owing in considerable part to the fact that the *Graphisurus pusillus* of Kirby had, before the discussion of it by G. H. Horn (Tr. Am. Ent. Soc., 1880, p. 128), been identified solely by surmise. LeConte made it a synonym of *Cerambyx fasciatus* Degeer, which would have given the name *Graphisurus* to the genus containing that species and *triangulifer* Hald. Dr. Horn later (l. c.) gave closer study to Kirby's description and came to the conclusion that *pusillus* was the same as *Leiopus biguttatus* Lec., which conclusion may or may not be correct. Mr. Gahan has recently erected the genus *Ceratographis* for *Leiopus biguttatus* Lec.

The writer lately came into possession, through the kindness of Mr. C. A. Frost, of a series of small specimens, transmitted under the name *Acanthocinus obsoletus*. A mere casual glance sufficed to show that they were not *obsoletus*, although perfectly congeneric, being much smaller, narrower and with smaller, closer elytral punctures toward base. Now on examining Dr. Horn's transcription of Kirby's diagnosis of *pusillus*, four facts and four only are to be seriously considered, for the others would fit any one of half a dozen species in several genera. These four determinative statements are (1) position of the thoracic spines "toward base," (2) the negative evidence afforded by failure to mention any erect elytral setæ, (3) the rounded apices of the elytra and (4) the size of the body—4¼ lines or 8.5 mm. All of these statements fit perfectly the series sent me by Mr. Frost, taken by him at Monmouth, Maine, and I have no hesitation in definitely deciding that they

*Many of the statements made by Hamilton in his review of *Hyperplatys* (Tr. Am. Ent. Soc., 1896, p. 129) are incorrect; furthermore he did not identify a single species correctly, excepting the very distinct *californica* and *femoralis*, and in these he overlooked the most important specific characters.

represent the true *pusillus* Kirby. In these Monmouth specimens the elytral apices are broadly rounded, with scarcely even a trace in any one of them of the narrow oblique truncature of *obsoletus*. It only remains, therefore, to designate *obsoletus*, *obliquus* and other similar forms, as detailed further on, now figuring under *Acanthocinus* —where they never really belonged, the thoracic processes being spinose and not dentiform and noticeably more posterior in position —by the name *Graphisurus* Kirby and to restore the name *Urographis* Horn to *triangulifera*, *fasciata* and related species, as suggested above.*

The genus *Urographis* is composed at present of a very limited number of species, all of the Atlantic regions and distinguished from any of the more typically Acanthocinid genera which follow, by the shorter antennæ, rather less basal position of the thoracic prominences, which are dentiform rather than spiniform and by the presence of erect sparse black hairs on the elytra. The three species and one subspecies in my cabinet may be outlined as follows:

Last dorsal segment (♀) very long, gradually finely pointed, convex and with a dorsal stria basally, the fifth ventral of the female greatly prolonged into a tube-like process, which is very deeply and angularly

* There are, however, some points that I fail to comprehend fully in this connection. Dr. Horn (l. c.) states that *Graphisurus*, as represented by *biguttatus* Lec. (*pusillus* Kirby) is in all respects a *Lepturges*, in which the thoracic spine is at a distance from the base—agreeing with my identification as above,—the female with an ovipositor about a third as long as the body,—also agreeing passably well—and having *sparsely placed erect hairs on the elytra*. This last statement is completely at variance with my determination from the Monmouth specimens, and is not supported by LeConte's definition of *biguttatus* or Kirby's description of *pusillus*, where no erect hairs are mentioned; and again, through the association of the former by LeConte with *symmetricus* and other true Lepturgids, an absence of erect hairs might be inferred to be still more likely. Then, on the other hand, LeConte places *biguttatus* with *symmetricus* and others, having an acutely angulate mesosternum. In my interpretation of *pusillus*, which is quite certainly not *Leiopus biguttatus* Lec., the middle coxæ are well separated, the mesosternum not angulate but broadly obtuse, and there are no vestiges of erect hairs on the elytra, the conditions throughout being exactly similar to those of *obliquus* Lec. I think that my interpretation of *pusillus*, through the Monmouth specimens, is correct, and as LeConte's *biguttatus* is surely something else— I formerly had an example of *Urographis hebes* under this name in my collection, which could not be true because of the broadly truncate elytra; widely separated middle coxæ and short antennæ,—which according to Horn has erect hairs, rounded elytral tips and narrowly separated middle coxæ, I have not seen it, and the name *Ceratographis* given it by Gahan is probably warranted; but I have nevertheless retained the name *Urographis*, because of certain doubts regarding the generic identity of *Ceratographis biguttata* and *Urographis fasciata*.

incised at apex; body moderately broad, narrower in the male, blackish, sometimes rufescent, the elytra with cinereous pubescence and numerous blackish punctures and with the basal region, a broad oblique fascia before and another more solid but zigzag behind, the middle, blackish and more or less comminuted; antennæ (♂) two-fifths, or (♀) one-fifth, longer than the body. Length—to end of elytra as in all such cases—(♂ ♀) 9.0–13.3 mm.; width 2.9–4.6 mm. New Jersey to Lake Superior. Fourteen examples. [*despecta* Lec.].

fasciata DeG.

A—Similar in general form, sculpture and ornamentation but smaller and of evidently narrower, more parallel form, with smaller prothorax and somewhat shorter antennæ; ovipositor more slender but otherwise similar; last dorsal (♀) more rapidly cuneiform, more exserted behind the elytra, with the apex narrower than in *fasciata*, the ventral emargination similar. Length (♂ ♀) 9.5–13.0 mm.; width 2.8–4.3 mm. New York (West Point),—Wirt Robinson. Apparently common and described from seven examples.

reducta n. subsp.

Last dorsal segment (♀) very much shorter, broader and flatter, without trace of median stria basally, the fifth ventral of the female having the produced portion much less extended and with its apex shallowly and evenly sinuate.....2

2—Body in sculpture, vestiture and color very much as in *fasciata*, rather narrow, parallel, subdepressed; head with a deep entire median stria; antennæ nearly one-half longer than the body, the joints cinereous in nearly basal half; prothorax four-fifths wider than long, the sides prominent and gradually obtusely angulate just before basal third; surface with the cinereous hairs broadly replaced medially and along the apex in great measure by short and sparser brown pubescence, the punctures fine and sparse, with a series of coarse punctures along the base; scutellum wider than long, subtruncate; elytra but little more than twice as long as wide, with numerous moderate brown punctures, asperulate basally, the cinereous vestiture replaced largely by brown at base, in a lateral spot before basal third and in a sharply defined narrow transverse fascia at apical third, which is but slightly oblique and but little distorted; apices broadly, rectilinearly and transversely truncate, the angles obtuse and blunt; erect hairs well developed; femora moderately clavate (♀), very strongly (♂); last dorsal (♀) projecting behind the elytra less than three times as long as wide, finely margined, cuneiform, with feebly arcuate sides and blunt apex. Length (♂ ♀) 9.6–10.8 mm.; width 3.0–3.3 mm. Iowa (Keokuk) and New York. Three examples.....**hebes** n. sp.

Body larger, more convex and much stouter, more densely and compactly clothed with cinereous vestiture; color rather blackish-brown; head with the impressed stria obsolescent on the front, the antennæ (♀) longer than the body, the joints cinereous basally as usual; prothorax less than twice as wide as long, the lateral tooth at basal two-fifths; surface densely cinereous, with a complex medial pattern of four velvety-black spots, separated by a dark region, the sides

with three or four small dark spots; elytra densely cinereous, with small sparse punctures and a large basal area, a short lateral oblique disintegrated fascia near basal third, a large oblique spot, not attaining the suture, solid and well defined at apical third, and a smaller and sharply defined marginal spot near the apex, brownish-black; last dorsal (♀) nearly four times as long as wide, parallel, with feebly arcuate sides, gradually converging posteriorly to the bluntly rounded apex. Length (♀) 11.8 mm.; width 4.4 mm. Ohio.
triangulifera Hald.

The last two species are rare in collections and I have at present but a single female of *triangulifera*. One male of *fasciata* of my series has a narrower outline, with relatively larger prothorax, more nubilate markings and more narrowly sinuato-truncate elytral apices, than any other, but additional examples are essential before coming to any conclusion concerning it. *Hebes* doubtless represents *Leiopus biguttatus* in many collections, but reasons are given in the footnote on p. 332 for concluding that there can be no such identity. The length of *biguttatus*, as given by LeConte, is 8.2 mm.; possibly the elytral tips may be narrowly truncate.

Graphisurus Kirby.

The species hitherto placed under *Acanthocinus* in our lists form an isolated group, having composite characters and affinities, which, as explained above under *Urographis*, should now take the name *Graphisurus* Kirby. The prominences of the prothorax, for instance, are not dentiform as in *Urographis* and the European *Ædilis edmondi* (*Acanthocinus*) as figured by Duval, but truly spiniform, more as in the Lepturgids, and are generally more posterior in position than in either *Urographis* or *Acanthocinus*, though never quite so nearly basal as in *Lepturges*, and the antennæ are very long and filiform as in the latter group, but the body is very different in facies, being relatively larger in size and with radically different type of ornamentation, the latter more remindful of *Urographis*. In the dense inferior fringe of hairs of the antennal joints, it however differs from all of the other American genera, the only vestige of this fringe in the latter being a very few short erect stiff black setæ, one to three or four perhaps on each joint, not constituting an analogy in any sense. The elytra have no erect hairs as they do in *Urographis*, this feature being present among Lepturgid genera—omit-

ting *Dectes* and *Colobothea* for the present—only in *Valenus* Csy., *Ceratographis* Gahan and *Chætanes* and *Phrissolaus* Bates. Another of the more important characters distinguishing *Graphisurus* from *Acanthocinus* is the much greater length of the basal joint of the hind tarsi in the former. Although there are remarkable antennal differences to be noted among the rather numerous species of *Graphisurus*, I cannot find any good reason for dividing them further than subgenerically; those species known to me may be defined as follows:

Male antennæ simple; body smaller as a rule. Atlantic to Pacific. (**Graphisurus** in sp.) 2

Male antennæ with an external knob at the apex of the fifth joint, the eleventh joint without vestige of terminal appendage; ornamentation similar. Pacific and Sonoran regions. (Subgen. **Canonura** nov.) .. 9

Male antennæ with an external knob at the apex of the fourth joint, the eleventh not appendiculate; body broader, flatter, more oblong and with strongly modified ornamentation, which is however derivable from the type prevailing in the two preceding groups. Atlantic region. (Subgen. **Tylocerina** nov.) 11

2—Elytra narrowly and very obliquely truncate at tip and having barely a vestige of raised discal lines or rows of dark spots 3

Elytra broadly rounded at tip and with more or less feebly raised lines which bear small spots of blackish tint 4

3—Body oblong, moderately convex, the elytra flattened between the vestigial lateral lines; color blackish, sometimes paler, with cinereous and blackish vestiture, the latter forming three irregular oblique fasciæ on each elytron and some basal spots, the pronotum irregularly maculate and with two more distinct tumid blackish subapical spots; antennæ (♀) one-half longer than the body, with joints three to six gradually diminishing in length; prothorax nearly two-thirds wider than long, the lateral prominence acutely spiculiform and at basal third; elytra oblong, parallel, much wider than the prothorax, rapidly and subcircularly rounded at apex; fifth ventral (♀) with a rounded emargination, fully as deep as wide, fringed with very short hairs, the last dorsal gradually almost rectilinearly narrowed throughout to the finely pointed apex, much shorter than the long black egg-tube, as usual in the genus; male not at hand. Length (♀) 11.5–13.8 mm.; width 3.6–4.3 mm. New York to North Carolina. **obsoletus** Oliv.

Body more elongate, larger in size and rather more convex, similar in color and maculation, except that the oblique fasciæ of the elytra are more widely separated; antennæ (♀) similar, except that joints three to six decrease more rapidly, thence of equal length to the tip, or (♂) two and one-half times as long as the body, more densely fimbriate beneath and with the outer joints gradually though slowly increasing in length, the eleventh two-fifths as long as the body; prothorax less transverse, one-half wider than long, otherwise

nearly similar, finely, sparsely punctate, with coarser punctures aggregated near the base; elytra longer, parallel (♀) or feebly cuneiform (♂), the punctures similarly coarse, deep and perforate, well separated, the outer raised line distinct before the middle nearly to the humeri; femora strongly clavate in both sexes; female with the fifth ventral very deeply emarginate at tip, the emargination fringed with long dense white hairs, the last dorsal segment rapidly narrowing to a point some distance from the tip, thence narrow and parallel to the acute or narrowly blunt apex; male with the fifth ventral more shallowly sinuate at tip, the last dorsal short, very narrowly, deeply and acutely incised medially, the lobes rounded. Length (♂ ♀) 14.0–15.5 mm.; width 4.6–4.9 mm. Florida.

floridanus n. sp.

4—Antennæ (♂) not or but little more than twice as long as the body, the outer joints not increasing noticeably in length.....5

Antennæ (♂) two and one-half to nearly three times as long as the body, the outer joints distinctly increasing in length.....6

5—Last antennal joint (♂) without trace of a terminal process. Body oblong, not very elongate, feebly convex, the elytra slightly cuneiform in both sexes, blackish, clothed with cinereous vestiture, variegated very confusedly with blackish spots; head with a deep entire median stria; lower lobe of the eyes elongate; antennæ slender, the joints cinereous at base, three-fourths longer than the body in the female; prothorax short, not quite twice as wide as long, the lateral spicule near basal third; surface nearly even, the anterior tumidities almost obsolete, rather finely and not densely punctate, with four ochreous spots anteriorly in transverse line, broadly concave and a little more punctate at base; elytra less than two and one-half times as long as wide, wider than the prothorax, the apices broadly rounded, the elevated lines obsolete but with the lineate black spots rather conspicuous, mingled with many other small black spots, the antemedian oblique fascia very indistinct, the post-median, and a subsutural spot near the apex, rather well defined; punctures moderate, very deep and close-set basally, sparse and less distinct apically; female with the last dorsal flat, narrow, gradually cuneiform to the obtuse apex, the moderately produced last ventral with the rather narrow emargination bearing a long dense fringe of whitish hairs; male with the supplementary last dorsal bilobed, sinuate medially. Length (♂ ♀) 8.5–11.0 mm.; width 2.6–3.2 mm. Maine (Monmouth),—C. A. Frost.....**pusillus** Kirby

Last antennal joint (♂) with a distinct terminal appendage, which however is short, not much over four times as long as wide. Body rather narrower and more convex, black, with dusky maculation, together with some cinereous, especially separating the conspicuous small black spots of the strongly elevated elytral lines; head strongly impressed, the stria obsolete near the antennal tubercles, the lower lobe of the eyes broader, only a little longer than wide; antennæ (♂) twice as long as the body, the joints cinereous in basal half; prothorax three-fifths wider than long, the spicules just before basal third; surface strongly but very sparsely punctate and with two antero-

posteriorly diverging lines of cinereous, beginning on the anterior tumidities, the punctures not coarser but finer near the base; elytra narrow but wider than the prothorax, feebly cuneiform, less than two and one-half times as long as wide, evenly rounding at apex to the bluntly rounded sutural angles; surface with rather strong and close-set punctures, the two oblique fasciæ tolerably distinct; supplementary dorsal segment (♂) narrowly and distinctly bilobed, the rounded separating sinus much larger than in the preceding; femora clavate, the abdomen with close-set denuded black spots. Length (♂) 9.0 mm.; width 2.6 mm. New Mexico. . **acomanus** n. sp.

6—Elytra each with two oblique and more or less disintegrated fasciæ nearly as in *acomanus*, and also numerous other small black spots arranged along the slightly elevated discal lines. 7

Elytra with solid velvety-black and irregular sharply angulate areas arranged in the usual two irregular oblique fasciæ, the spots of the raised lines subconfluent; body more broadly oblong. 8

7—Form moderately broadly oblong, with subparallel elytra, each broadly rounded at apex; head larger than in the preceding, otherwise similar, the antennæ similar but much longer, the process of the last joint (♂) very much longer, eight times as long as wide, with the terminal brush of hairs distinct; joints ashy in basal half, the ashy part extending much more apically on the longer last three joints; prothorax one-half wider than long, the spines short, sharp, slightly recurved at basal third; surface strongly but very sparsely punctate, with four anterior cinereous spots, the two inner on the inner sides of the tumors, the surface thence obliquely cinereous to the base; elytra coarsely, extremely densely punctate between the lines; supplementary dorsal (♂) broadly bilobed at tip, the lobes widely separated by a shallow angular sinus; last dorsal (♀) produced and subparallel apically to the very obtuse and densely fringed tip. Length (♂ ♀) 10.7–12.0 mm.; width 3.1–3.8 mm. New Mexico and Colorado. . . . . **obliquus** Lec.

A—Similar to the preceding but smaller and relatively narrower, almost parallel, the anterior fascia broader and more diffused, the posterior narrow and similar, the punctures and ornamentation nearly similar; sides of the prothorax with a very small and almost obsolete spinule, projecting from the swelling at basal third; supplementary dorsal (♂) narrower, the lobes narrower and much less obtuse, separated by a very much deeper and angulate emargination. Length (♂) 10.5 mm.; width 3.0 mm. Mexico (Chihuahua),—C. H. T. Townsend. . . . . **chihuahuæ** n. subsp.

B—Nearly similar to *obliquus* in form, color and ornamentation, but with the elytral punctures more widely separated and not so coarse, the elytral apices narrower, subtruncate; supplementary dorsal (♂) differing materially in having the lobes smaller, more rounded and separated by a rounded sinus of varying depth, the sinus larger than the lobes; antennæ more slender, with the terminal process nearly similar, long. Length (♂ ♀) 10.5–11.0 mm.; width 3.1–3.4 mm. New Mexico (Fort Wingate). **sedulus** n. subsp.

Form narrow, more subcylindric, the vestiture and sculpture almost as in the preceding, except that the cinereous vestiture of the upper surface is in greater abundance, whiter and more conspicuous; head moderate, the eyes more widely separated, the antennal prominences less strong and with the surface between them much flatter, the antennal scape more swollen apically than in *obliquus;* lower lobe of the eyes longer; antennæ two and three-fourths times as long as the body, similar, except that the outer joints are less cinereous, the terminal process much shorter, only four or five times as long as wide; prothorax shorter, more than one-half wider than long, the spinules distinct, at basal third, the surface similar, except that the punctures are rather coarser and more numerous; elytra nearly similar, except that the punctures are smaller and sparser, everywhere well separated; supplementary dorsal (♂) narrower, its apex almost entirely occupied by an evenly rounded and moderately deep sinus, the lobes very narrowly rounded at their apices; fifth ventral with the cinereous vestiture uniform, the apical fringed sinus as usual. Length (♂) 9.5 mm.; width 2.8 mm. California (Siskiyou Co.).....**pacificus** n. sp.

8—Body (♀) rather broadly oblong, parallel, black, the under surface obscure rufous, the abdomen black; head moderate, the antennæ much longer than the body; prothorax rather small, three-fourths wider than long, the spicules distinct, at basal third, the sides feebly and evenly oblique thence to the apex but sinuate before the prominences; surface with very sparse moderate punctures and four longitudinal cinereous vittæ, the two inner arcuately diverging from the subapical tumors; elytra much wider than the prothorax, with very broadly exposed and basally transverse humeri, the sides rounding behind to very near the suture, each narrowly rounded at apex; surface obliquely impressed behind the humeri, subdisconnectedly lineate with deep black on the feebly raised lines, the flanks basally, an adjoining discal spot at one-third and an elongate and more sutural spot before the middle, a narrow irregular black fascia behind the middle and prolonged along the first and second raised lines to near the apex and there inclosing a cinereous spot, deep and solid velvety-black; punctures between the raised lines moderate in size but deep and close-set, last dorsal (♀) flat, gradually attenuated to near the apex, thence rather narrowly produced to the moderately acute and densely silvery-fimbriate apex, the fifth ventral much produced, deeply and angularly incised at apex. Length (♀) 12.2 mm.; width 3.7 mm. New Mexico. .**angulosus** n. sp.

9—Dark areas of the pronotum and elytra solid and abruptly defined. Body dark brown in color, the paler vestiture only moderately dense and pale brownish; antennæ (♂) three and one-half times as long as the body, pale cinereous throughout, the dense erect cinereous fringe as long as one-half the thickness of the joints, the outer joints rapidly very long; prothorax one-half wider than long, the lateral prominences large, very acute, with the apices feebly flexed backward, less basal than in any of the preceding species, being near basal two-fifths; surface with rather small sparse punctures, brown,

with an irregular pale lateral area enclosing some dark spots; elytra feebly cuneiform, a little more than twice as long as wide, the apices broadly rounding to the blunt sutural angles, rather finely, sparsely punctate, more coarsely, densely and granularly so basally, the basal sixth—somewhat raggedly—and an oblique broad fascia before and another behind the middle, also a broad transverse fascia near the apex, dark brown, the paler areas with a few brown dots, a row of the latter along the suture also evident; male with the fifth ventral circularly sinuate at tip as usual. Length (♂) 19.0 mm.; width 6.0 mm. New Mexico (Fort Wingate).....**spectabilis** Lec.

Dark areas of the upper surface blacker in color, less solidly defined and more comminuted at the edges, the basal dark area very much shorter; prominences at the sides of prothorax large and acute, perhaps very slightly more posterior in position; under surface with close cinereous pubescence, speckled with black laterad. Pacific coast fauna.....10

10—Body large and moderately stout, broadly convex, piceous-black, the paler dense vestiture cinereous; antennæ (♂) very long, rather stout basally, three and three-fourths times as long as the body, the last joint three-fifths as long as the body; joints three to five cinereous, with black apices, the outer joints cinereous; dense white fringe a little longer than half the thickness of the joints; prothorax much more coarsely and less sparsely punctate than in the preceding, more glabrous but with four fulvous spots in transverse line anteriorly; elytra nearly similar in form but broader, with similarly placed fasciæ and scattered dark dots; punctures moderate and sparse, becoming coarse and close basally but granose only very near the base, the oblique impression, extending posteriorly from near the middle of the base, less deep than in *spectabilis;* legs longer and still stouter, the femora rather less abruptly though similarly very strongly clavate; male with the last true dorsal angularly emarginate, the notch occupying the entire apex, not as deep as wide, with its sides straight, the supplementary dorsal broadly bilobed at apex; fifth ventral more finely and feebly pubescent medially; female shorter than the male, with more parallel elytra and very much shorter and more slender antennæ, less than twice as long as the body, with the joints not lengthening apically, the fifth dorsal broad, rapidly and subsinuously narrowing distally to the rather acute, densely albido-fimbriate apex; otherwise nearly similar to the male. Length (♂ ♀) 18.0–22.0 mm.; width 6.0–6.4 mm. Washington State to northern California. [*Eutrypanus princeps* Walk.].....**princeps** Walker

Body much narrower and smaller in size, similar to the preceding in color, ornamentation and sculpture, except that the punctures of the pronotum and elytra throughout are a little smaller and sparser and the oblique dark irregular fasciæ of the elytra relatively narrower; antennæ (♂) shorter, more slender, not three and one-half times as long as the body, with joints three to seven cinereous with black apices, the fringe very much shorter, less than half as long as the thickness of the joints; spines of the prothorax shorter, less acute;

elytra nearly two and one-half times as long as wide, only just visibly cuneiform; last true dorsal segment with an evenly rounded emargination, wider than deep and not occupying the entire apex, the supplementary segment much narrower than in *princeps*, bilobed, the lobes more prominent and much more narrowly rounded; fifth ventral uniformly clothed throughout; hind femora rather more feebly and much more abruptly and more apically clavate. Length (♂) 14.5 mm.; width 4.5 mm. California (Siskiyou Co.),—Koebele. **vinctus** n. sp.

11—Form (♂) moderately broad, dark brown, the vestiture minute, dense, luteo-cinereous; head relatively rather small, the antennæ three and three-fourths times as long as the body, slender, the basal joint cylindric, gradually obliquely narrowed at base, the vestiture luteo-cinereous, brown toward the articular apices, the fringe not so compact or uniform as in *spectabilis* and allies but loosely composed of longer and shorter hairs, denser and more uniform toward the apices of the joints; prothorax scarcely more than one-half wider than long, the slightly reflexed acute spur, projecting from the lateral swellings, at basal two-fifths; surface with very sparse and moderate punctures and a transverse entire ridge near the apex, interrupted only at the middle, also with two narrow dark vittæ, very broadly interrupted medially; elytra twice as long as wide, parallel, rounding behind to the rounded sutural angles, the pale brown vestiture with four more or less incomplete series of dark dots, placed on feebly elevated lines, also with a long vitta occupying the flanks from base for two-fifths, then prolonged in a slender streak for some distance and angulate upwardly near basal third, extending obliquely on the disk for a short distance, a longitudinal basal streak at inner third and a long cuneiform anteriorly incised and posteriorly divided spot at inner third behind the middle, all of velvety black; under surface rufous; femora strongly clavate; anterior tarsi moderate, the second joint wider than long; last true dorsal segment broad, bilobed, with a large rounded median sinus. Length (♂) 19.5 mm.; width 6.2 mm. Pennsylvania.....**nodosus** Fabr.

Form (♂) very much broader, darker and blackish in color, the vestiture similar but more infuscate, the elytral maculation almost similar; head larger; antennæ nearly similar but a little less slender, with the cylindric basal joint stouter and more abruptly obliquely narrowed at base; prothorax shorter, very much more transverse, twice as wide as long, the lateral plectra nearly similar, the punctures even sparser, the central elongate callus also denuded, differing very much in having four widely separated tubercles in transverse line near the apex instead of a continuous medially interrupted ridge, the fine black vittæ similarly only visible near apex and base; elytra much broader, distinctly less than twice as long as wide, the sides rounding behind to a broad transverse and rectilinear truncature at apex, defined externally by an obtuse but distinct angle; under surface rufo-piceous; femora similar, the anterior tarsi larger, more dilated but with the second joint as long as wide; last true dorsal segment nearly similar, except that the sinus is broader and shal-

lower. Length (♂) 20.8 mm.; width 7.7 mm. North Carolina (Southern Pines),—Manee..... **laticollis** n. sp.

The female of most of the species seems to be taken much less frequently than the male and I have not seen female examples of either of the last two described above. *Acanthocinus linearis* Skin. (Ent. News, 1905, p. 290) from southern Arizona, I have not seen; its scheme of ornamentation seems to be radically different and there may be some doubt as to the generic reference.

The two following genera are rather anomalous Acanthocinids, and they cannot be placed in very satisfactory succession with any of the preceding.

Dectes Lec.

This genus is allied in most of its structural characters with *Lepturges*, but differs completely in general habitus, owing to its long parallel subcylindric form of body, and it differs structurally in its finely faceted eyes, thick tarsi with shorter first joint of the posterior, numerous short erect setæ of the elytra and shorter antennæ. In the nature and position of the thoracic spines and in the very approximate globular coxæ it is purely Lepturgid. It is very widely distributed throughout North America, excepting the Pacific coast regions, and includes numerous species, which because of their uniform vestiture and general similarity of form, have never been studied attentively. Some of the forms described below are undoubtedly true species; others may prove to be rather subspecies, when the meaning of that expression shall have been definitely determined. They are very uniform in appearance, being cylindrical and densely clothed with short ashy hairs, with short stiff setæ arising from the elytral punctures, so that these features will not be mentioned in the following short diagnoses:

Elytra sharply truncate at apex, the external angle distinct and sometimes slightly produced posteriorly.....2
Elytra broadly rounded, sometimes feebly truncate but with the external angle always rounded or indistinct.....6
2—Elytra more elongate, always more than twice as long as wide in both sexes.....3
Elytra shorter, not more than twice as long as wide.....4
3—Middle coxæ almost contiguous (♂), narrowly separated (♀); body larger in size than in any other species, the elytral humeri never black; antennæ similar in the sexes, a fourth longer than the

body, the scape unusually bent at apex, with the external angle acutely prominent; last dorsal (♀) gradually cuneiform, with the apex more abruptly and broadly arcuate; fifth ventral (♂) as long as the fourth, rather narrowly sinuato-truncate at apex, or (♀) one-half longer than the fourth, with the apex still more narrowly sinuato-truncate. Length (♂♀) 8.0–10.0 mm.; width 2.2–2.8 mm. Pennsylvania (Harrisburg),—A. B. Champlain. Abundant.

spinosus Say

Middle coxæ equally and narrowly though distinctly separated in both sexes; body small and notably slender (♂), or larger and stouter (♀), the humeri always having a small black spot; elytral apices truncate, with the external angle still more sharply marked than in the preceding; last dorsal segment (♀) evenly and rather acutely parabolic in form; body much smaller, the sexual characters nearly similar, except that the fifth ventral (♂) is distinctly longer than the fourth and more narrowly truncate at tip; antennal scape somewhat similar. Length (♂♀) 6.5–8.0 mm.; width 1.75–2.25 mm. Colorado, Montana and New Mexico. Abundant....**alticola** n. sp.

4—Integuments piceo-rufous in color; body stout; prothorax unusually large, with a very stout oblique spine; humeri brown; elytral apices transversely truncate but with the external angle not prominent though evident; last dorsal segment (♀) not projecting behind the elytra, small, parabolic; mesosternum triangular, the coxæ narrowly though distinctly separated. Length (♀) 8.2 mm.; width 2.4 mm. Arizona (probably southern).....**thoracicus** n. sp.

Integuments black; body stout, more abbreviated than in any other species, the prothorax relatively less developed, with the usual spines, the humeri black at base.....5

5—Elytral truncature subsinuate, the external angle notably prominent posteriorly; middle coxæ (♂) very narrowly, or (♀) much more widely, separated; fifth ventral (♂) a little longer than the fourth, rather narrowly truncate at apex; sides of the prothorax before the spine only very feebly converging to the apex, sometimes subparallel. Length (♂♀) 6.5–7.8 mm.; width 1.8–2.2 mm. Long Island (Willets Point) and North Carolina (Southern Pines),—Manee.

brevis n. sp.

Elytral truncature sharply marked, the external angle distinct but only faintly subprominent; middle coxæ (♂) narrowly though distinctly separated, the fifth ventral segment not longer than the fourth and more broadly truncate at tip; sides of the prothorax more strongly converging and nearly straight before the spine, which is not so abruptly spiculiform as in the preceding. Length (♂) 7.5 mm.; width 2.2 mm. Texas (Brownsville),—Wickham...**latitarsis** n. sp.

6—Middle coxæ narrowly separated as usual.....7

Middle coxæ subcontiguous in both sexes, the mesosternal process abbreviated between them.....8

7—Elytral apices subevenly and rather strongly rounded; integuments black; prothorax parallel in both sexes, equally and moderately punctate; elytral punctures distinct and well separated, the erect setæ very short; body small in size and unusually slender; middle

coxæ separated by a fifth to third of their width; last dorsal (♀) projecting, narrowly parabolic in outline; male with the fifth ventral as long as the fourth, sharply and distinctly sinuate at tip. Length (♂♀) 5.7–7.7 mm.; width 1.25–2.00 mm. Arizona (locality unrecorded) ..... **brevisetosus** n. sp.

Elytral apices narrowly and obliquely truncate but with the outer angle very obtuse and blunt; body very small in size, the integuments piceo-rufous; prothorax shorter, wider than long, subparallel, the punctures becoming gradually sparse anteriorly; elytral punctures strong, rather dense, closer than in the preceding, the setæ similarly short; last dorsal segment (♀) scarcely at all projecting, obtusely rounded. Length (♀) 5.7 mm.; width 1.4 mm. Arizona (locality unrecorded)..... **discolor** n. sp.

8—Body small, rather slender in the male, the female stouter and apparently much less abundant; integuments black, the humeri black beneath; prothorax distinctly shorter than wide; elytra rounding at apex and feebly subtruncate to the obtusely blunt sutural angles; female with the last dorsal segment barely exposed, parabolic, the apex narrowly rounded, the fifth ventral one-half longer than the fourth, rounded at tip; male with the fifth ventral not longer than the fourth, broadly sinuate at apex; elytral punctures very close-set, the setæ numerous and well developed. Length (♂♀) 6.7–7.6 mm.; width 1.8–2.0 mm. Mexico (Tepehuanes and Durango City, State of Durango),—Wickham..... ***aridus** n. sp.

The species described by LeConte under the name *texanus* is valid, I think without much question, if founded upon a normal specimen, and is so regarded by Bates; the thoracic spines do not diverge obliquely, as in the species above described, but are more parallel with the lateral outline of the prothorax; possibly this may be an individual deformity, but it is impossible to decide at present. This genus is well represented in Mexico and is divided by Bates into two sections, *Dectes* Lec., having the scape of the antennæ not or scarcely flattened beneath and the body densely clothed, and *Canidia* Thoms., having the body sparsely clothed to almost nude and the scape broadly flattened or even grooved beneath.

Colobothea Bates.

In this genus, which is also rather anomalous in form among the other Lepturgids, the sexual characters at the abdominal apex in both male and female become very conspicuous and diversified to such a degree, in forms that otherwise greatly resemble each other, that they serve as the best means of recognizing the rather numerous species. The two following species do not seem to have been included in the material studied by Mr. Bates:

*Colobothea sexualis n. sp.—Rather stout, convex, dark red-brown in color, the maculation luteo-cinereous; head with two narrow pale vittæ; antennæ about two-thirds longer than the body in both sexes, piceous, the joints slightly cinereous toward their bases; prothorax a fifth (♂) to two-fifths (♀) wider than long, feebly swollen at the sides subbasally, convex, with two approximate subentire pale vittæ transversely connected at base and, outside of these, two fine streaks just above the flanks and one at outer fourth near the apex; elytra cuneiform, convex, finely, sparsely punctate, each puncture bearing a short stiff erect black seta, the pale spots comminuted and in somewhat lineal arrangement in about basal third, a large subquadrate and sometimes disintegrated discal spot about the middle, and a few small spots near the apex; carina above the flanks rather obtuse, subduplex. Male with the fifth ventral abruptly upwardly declivous apically, the apex produced medially in a long slender spiniform process, bending downward slightly apically, and, at each side of the line of flexure, a long compressed thin process, projecting posteriorly almost as far as the central process. Female with the last dorsal segment flat, one-half longer than wide behind the elytra, the sides converging, then parallel to the truncate apex, which has several long hairs and, at each side, two long stiff spiniform setæ, the side margins finely cariniform; the fifth ventral is triangular, with narrow emarginate apex and somewhat sinuate sides. Length (♂ ♀) 11.2 mm.; width 4.0–4.2 mm. Honduras.

Allied to *ramosa*, *guatemalina* and *parcens* of Bates, but differs in the sexual characters as inferable from the descriptions.

*Colobothea pleuralis n. sp.—General facies as in the preceding, black, densely clothed with minute blackish-brown vestiture and yellowish-white spots; head with two pale vittæ; antennæ three-fourths longer than the body, nearly as in the preceding; prothorax nearly a fourth wider than long, swollen subbasally, more narrowed thence to the apex than in *sexualis*, convex, having two entire pale approximate medial vittæ, which are transversely united throughout basal half, also a sublateral narrow vitta, slightly interrupted medially and not attaining base or apex; elytra finely, sparsely punctate and setulose as in *sexualis*, cuneiform, the flanks flat, polished, defined above by a very acute prominent carina, the disk with the pale maculation disposed almost exactly as in *sexualis* but with the spots rather less numerous. Male with the fifth ventral plate transverse, abruptly flexed upward medially, the upturned part flat, triangular, concave medially, with its narrow setose apex narrowly emarginate, the emargination filled by two minute short styliform processes, each bearing a long porrect brush of hairs at apex. Length (♂) 10.7 mm.; width 3.8 mm. Panama (Darien).

The acute angle limiting the transverse truncature of the elytral apices externally is much longer and more spiniform here than in *sexualis*, and the form of the fifth ventral plate in the male is completely different, remarkably so for two species which resemble each other so closely to superficial view.

Mr. Bates does not appear to mention the short stiff erect setæ arising from the elytral punctures in this genus; they are very obvious in both of the above species.

Tribe POGONOCHERINI.

Pogonocherus Latr.

The small species of this genus having truncate elytral apices and allied to *penicillatus* and *mixtus*, are very different in appearance from certain larger forms, such as *negundo*, with rounded apices, and should probably constitute a distinct genus; but, as both are distinct in habitus from the European species, with which *crinitus* Lec., is congeneric, no separation should be made except in a general study of the tribe. Excepting the Pacific coast, these allies of *penicillatus* and *mixtus* are rather numerous in the colder parts of North America, to which regions they are virtually limited, but have never formed the subject of special study. The antennæ differ but little sexually and vary from a little longer, to evidently shorter, than the body, the latter generally the case in the female; they are testaceous throughout, the joints gradually black apically, almost nude, but with a loose fringe of rather long, erect and sparsely placed hairs beneath, the scape oval, short and stout, gradually much narrowed toward base. The female has a sharply marked deep transverse excavation at the apex of the fifth ventral, this segment in the male being shorter, unmodified and sinuato-truncate medially at tip; the thighs are moderately but rather abruptly clavate. The species of this group, as represented in my cabinet and including *parvulus*, *simplex*, *alaskanus* and *arizonicus*, the characters of which are drawn from published descriptions, are as follows:

Elytra each with three discal carinæ, the outer two very sharp, the inner more obtuse and bearing tufts of agglomerated erect black hairs, of which one is subbasal.....2

Elytra without acute and sharply marked carinæ, though occasionally strongly and obtusely ridged.....3

2—Prothorax longitudinally plicato-rugose and closely punctate; body stout, piceous, the scattered erect black hairs unusually long; head narrower than the prothorax, which is about a fourth wider than long, evidently wider at apex than at base, the lateral prominences sharply dentiform but not spiculate; surface rather closely pubescent, pale along the apex and base, with two strong polished tubercles and a third, very small and feeble, on the median line behind the

middle; elytra short, much wider than the prothorax, three-fourths longer than wide, parallel, rounding behind to the truncatures, the outer angle distinct but not at all prominent; surface very coarsely punctate, closely and confusedly toward the suture, more sparsely and sublinearly elsewhere, piceous, with an oblique dense cinereous fascia on each from just behind the humeri nearly to the suture at basal third, also variegated with fusco-cinereous and blackish in about apical third; inner ridge with a subbasal cluster of black hairs and also three behind the middle. Length (♀) 5.7 mm.; width 2.0 mm. Maine.....**penicillatus** Lec.

Prothorax confusedly and rather coarsely rugose in sculpture; body a little larger, notably more elongate, nearly black, the vestiture almost as in *penicillatus*, the prothorax even a little more transverse, subsimilar in the sexes, the lateral prominences similar, the tubercles very much flatter and more diffuse and not so shining, being coarsely punctured, the subdepressed median region wholly rugose, excepting a small elongate-oval and feebly convex polished callus which is abruptly defined on the median line near basal third; elytra as in the preceding but more elongate, with the punctures equally close-set but much less coarse, the outer angle at the apices rather more prominent and sharply-marked, the truncatures more sinuate, the antero-lateral fascia narrower though similar in position, the posterior maculation nearly similar, the inner ridge similarly fasciculate, except that there are always four or five fasciculate tufts behind the middle. Length (♂ ♀) 5.4–6.2 mm.; width 1.75–2.0 mm. Colorado. **carinatus** n. sp.

3—Elytra colored and fasciate nearly as in *mixtus* and similarly without ridges, but with a longitudinal series of three fasciculate tufts of short erect black hair on each, posterior to the fascia; elytral apices truncate, the external angle acute and prominent, the sutural angle obtusely rounded; decumbent hairs of the under surface very dense at the apices of the abdominal segments. Length 13 mm.(?). Arizona (Huachuca Mts.).....**arizonicus** Schf.

Elytra with an almost even convex surface, except in *fastigiatus* and *alaskanus*, and strong punctures, confused suturally, sublineate laterally and without trace of fasciculate tufts at any point, except in *alaskanus*.....4

4—Outer angle at the elytral apices always sharply marked, sometimes notably prominent posteriorly.....5

Outer angle very obtuse and more or less feebly defined, sometimes obsolete.....8

5—Size very small, piceous, sparsely pubescent; prothorax (♂) finely rugose or (♀) smooth, with the discal tubercles slightly prominent; elytra testaceous, with nebulous fuscous maculation at the middle, more densely cinereo-pubescent anteriorly, having three subelevated discal lines, the intervals irregularly biseriately punctate; antennæ testaceous, fusco-annulate. Length 3.8 mm. From near the headwaters of the Mississippi River.....**parvulus** Lec.

Size generally much less minute, with a more sharply marked anterior fascia of pale pubescence.....6

6—Prothorax very short, fully one-half wider than long. Body unusually small in size and rather stout; head with the median stria strongly marked; prothorax black, pale at base and apex, confusedly, minutely and densely vermiculato-rugulose, without a polished median spot, the tubercles large, rather prominent, with their summits broadly smooth, the lateral prominences bearing a minute spicule; elytra much wider than the prothorax, short, barely three-fifths longer than wide, parallel, the apices rather deeply sinuate, the outer angle posteriorly spiculiform; erect black hairs few in number and very short; surface unusually finely, moderately closely punctate, confusedly toward the suture, sublinearly toward the sides between the feebly tumescent lines, coarsely on the flanks, the fine and very dense cinereous-white vestiture forming a very large even anterior chevron, attaining the middle of the length, where it joins the confusedly maculate remainder of the surface, the spots fulvous, cinereous and black; at the middle laterally there is a large and unusually sharply defined black area. Length (♀) 4.3 mm.; width 1.6 mm. Massachusetts (Framingham),—C. A. Frost. Bred from *Salix*.....**salicola** n. sp.

Prothorax about as long as wide, or never more than slightly abbreviated.....7

7—Elytral apices narrowly and deeply sinuate, the sutural tooth larger than the lateral, which is sharply marked but not prolonged. Body elongate, more depressed than usual, deep black; antennæ (♂) evidently longer than the body; prothorax slightly wider than long, a little narrower at base than at apex, deep and subopaque black, paler only along the apical and basal beads, finely, densely sculptured, without smooth median area, the tubercles large and strong, their summits smooth and shining, the lateral prominences strong, acutely spiniform at their summits; elytra only a little wider than the prothorax across the spines, parallel, nearly twice as long as wide, rather closely pubescent, the vestiture black on the dark areas, yellowish-white on the paler areas, the punctures moderate in size, well separated, closer suturally and especially dense in the uniform black basal area, seriate externally between the feebly tumid lines, the flanks with unusually few punctures and only near the lower part; pale dense vestiture forming a very dense and unusually large, exceptionally well defined area, in the form of a wide entire chevron, the two posterior subsutural lobes of which nearly attain the middle of the length, the anterior concave part more broken; posterior pale and black confused maculation confined to but little more than apical fourth; femora unusually strongly clavate. Length (♂) 6.5 mm.; width 2.0 mm. Colorado.....**emarginatus** n. sp.

Elytral apices truncate, with sharply marked or more or less posteriorly prominent outer angle. Body smaller, piceous-black to black and more convex; pale elytral maculation occupying most of the surface, the vacant black latero-medial area somewhat variable in extent, the erect black hairs numerous and well developed; prothorax slightly shorter than wide, the base barely perceptibly narrower than the apex in either sex, the lateral prominences very acute, sometimes with

a minute spicule; surface with the plications medially rather coarse and shining, rarely having a smooth polished feeble callus, the tubercles large but not much elevated, shining at summit, a little stronger in the male; elytra four-fifths longer than wide, very coarsely and notably closely, to less coarsely and more sparsely, punctate, always more serially toward the sides, the raised lines very feeble or obsolete; ante-median yellowish-cinereous chevron moderately wide, disintegrating somewhat near the suture, the posterior region of confused tawny and black maculation having very little cinereous intermingled. Length (♂♀) 4.6–5.7 mm.; width 1.4–2.0 mm. New Jersey and New York (Lake Champlain), westward to Indiana, Wisconsin (Bayfield) and Colorado. . . . . **mixtus** Hald.

8—Form oblong-elongate, only feebly convex, more shining than usual; head well developed, the black basal joint of the antennæ unusually bright red at base; prothorax as long as wide, much larger and with base and apex subequal (♀), the base much narrower than the apex (♂), the lateral prominences very strong and spiniform, the tubercles strong, with rather narrow polished summit, the intermediate depression dull, finely, densely plicato-rugulose; elytra twice as long as wide (♀), distinctly shorter (♂), much wider than the prothorax and with rather prominently rounded humeri, the dense yellowish fascia broad, very oblique, narrowing much at the suture and only just visibly before the middle of the length, somewhat as in *emarginatus*, having a short internal ramus at basal fourth or fifth, which tends to cross the suture as in that species, the posterior yellow maculation confined to about apical fourth; punctures deep, rather coarse posteriorly, less coarse and much closer basally, forming approximate but not very regular geminate series externally in the concave intervals; each elytron with three progressively elevated lines, the inner feeble, the outer very strong, acute along the summit and cariniform; apices feebly sinuato-truncate, the sutural angle prominent posteriorly and obtusely dentiform, the outer angle extremely obtuse and barely evident though not rounded. Length (♂♀) 5.9–7.5 mm.; width 1.9–2.4 mm. Montana. . **fastigiatus** n. sp.

Form nearly as in the preceding, black, the prothorax and elytra clothed with black-brown pubescence, intermixed, especially at the sides and apex of the elytra, with gray, each elytron having laterally, before the middle, a large white spot; thoracic tubercles distinct; elytra coarsely, irregularly punctate, only the two lateral intervals elevated, the surface between the inner and the suture having a series of four condensed tufts of black hairs, the apices truncate. Length 6 mm. Alaska. . . . . **alaskanus** Schf.

Form and size apparently somewhat as in *fastigiatus*, nigro-piceous, with variegated white pubescence and sparsely nigro-pilose; elytra toward the suture confusedly, externally seriately, punctate, with a larger oblique white area before the middle; apex rounded, not at all truncate, the suture rather prominent, the external ridges scarcely to be traced. Length 6 mm. Kansas. . . . . **simplex** Lec.

The species described above under the name *fastigiatus*, I should

have been disposed to identify as *simplex* Lec., were it not that the author distinctly states that the discal ridges of the elytra "are scarcely to be traced"; in *fastigiatus* the prominence of these ridges, especially the external of the three, which is very high and subacutely cariniform in both sexes, completely prohibits any close association with *simplex*, although it evidently belongs to the same group, having the external angle at the elytral apices very obtuse; in *fastigiatus* this angle is evident at the outer end of the truncature; in *simplex* it may have become so very feeble as to escape the attention of the describer. *Alaskanus*, though apparently similar to *fastigiatus*, has a series of fasciculate tufts, not traceable in that species. The original *penicillatus* was obtained by LeConte on Pic Island, near the northern shore of Lake Superior, and I am not perfectly sure that the representative from Maine, described above under that name, is really conspecific; similar examples, however, serve that rôle in all present day collections. Some specimens of *mixtus*, from New Jersey and Pennsylvania, have obviously coarser, denser and more confused punctures, more wide-spread pale maculation on the elytra and less prominent external apical angles, than others, but I find the darker, more apically angulate and more linearly and less densely punctate forms are not confined to any particular locality. The size of *arizonicus*, as given by Schaeffer, is probably a misprint.

Tribe DESMIPHORINI.

Desmiphora Serv.

This is a moderately large genus in the warmer parts of North and South America. The species have remarkably lineate and tufted vestiture, giving them a very peculiar appearance. The following species is possibly not the same as that identified by LeConte as *mexicanus* Thoms., at any rate it is not that species, being very much smaller in size among other differences. More recently Mr. Schaeffer (Bull. Bk. Inst., I, p. 328) names in his Brownsville list what is evidently the same species as the one here described, *hirticollis* Oliv., but makes no further remark concerning it. As *hirticollis* is a Brazilian species, the probabilities of its being identical are remote:

Desmiphora intricata n. sp.—Subcylindric, piceous-black, very densely clothed with brown prostrate hairs, sprinkled with a few cinereous in color; head flat between the antennæ, the latter (♀) four-fifths as long as the body, compact, very densely, coarsely pubescent and with long flying hairs in addition, the pubescence brown, sprinkled with cinereous, the latter color alone at the bases of the joints; scape only twice as long as wide; prothorax as long as wide; base and apex equal, the latter the more arcuate, the lateral spines strong, rather abruptly formed at the middle; surface convex, coarsely, rather sparsely punctate, with two nearly straight parallel-sided oblique white vittæ from the base at the sides, nearly to the apex more medially, where each is sinuate within; also with an elongate flat polished glabrous central spot and an eye-like blackish-pubescent spot, margined with white, at each side anteriorly; also, at the middle of the apex, a large tuft of long erect white hairs, extending and diminishing posteriorly, ending at the central glabrous spot; elytra a little wider than the prothorax, twice as long as wide, rounded at the apices, having a discal carina at inner third, just outside of which and at apical fourth, there is an elongate rough glabrous tumor surrounded by long erect fulvous hairs and joined with the suture and external margin by a very fine line of short white hairs, which bears a small fascicle of long white hairs near the suture and another at outer third, where there is a strong arcuation of the line; also with two small discal fascicles of stout brown hairs near the base; region near the scutellum flattened, coarsely punctate, subglabrous and bounded behind by fine oblique lines meeting on the suture before basal third, where each bears a small fascicle of long white hairs; under surface with an eye-like white-margined spot at each side of each abdominal segment; legs densely pubescent and with long hairs; fifth ventral (♀) elongate, strongly rounded at tip; last dorsal appearing behind the elytra, rounded, densely nigro-pubescent, with a central spot of white. Length (♀) 10.0 mm.; width 3.5 mm. Texas (Brownsville).

It is difficult to convey any useful idea of this beetle without a good deal of verbiage; the above description will probably enable one to compare it with other described Mexican species.

Tribe ONCIDERINI.

Lochmæocles Bates.

It seems to the writer that the difference in habitus between this subgenus, erected by Bates to receive certain large and heavily built species, in which the male antennal tubercles are produced in slender spiniform processes, and the smaller, much more slender species, without cephalic modification in the male, constituting *Oncideres* proper, are sufficient to give *Lochmæocles* full generic value. In addition to these differential features, it should be stated

that the legs are longer and the tarsi relatively shorter than in *Oncideres*. Mr. Schæffer has lately (Can. Ent., 1906, p. 18) identified certain examples of this genus, taken by Prof. Snow in southern Arizona, as *tessellatus* Thoms., but, with a male of that species from Honduras before me, I am able to state that this identification is not exactly correct, although it is an allied species. The true *tessellatus* is much smaller:

Lochmæocles marmoratus n. sp.—Body stout, deep black, with pale cinereous-white vestiture, uniform and concealing the surface on the head and prothorax, though often in great part fulvous at the sides; on the elytra it is disposed in dense and uniformly distributed small spots, which are irregularly pale fulvous, except about their peripheries, not concealing the punctures or tubercles but forming in the interspaces smaller white spots, sometimes united in slightly vermiculiform lines, and with a large unevenly condensed oblique white area at the side of each medially; anterior parts impunctate where denuded, the prothorax fully twice as wide as long, transversely truncate at apex, feebly bisinuate at base, with a strong angular lateral prominence at basal third; surface coarsely, transversely plicate; elytra three-fourths longer than wide, feebly cuneiform (♂), broader and almost parallel (♀), together broadly rounded at apex; punctures fine and sparse, becoming rather abruptly coarser in about basal two-fifths and, in about basal fourth, coarser still, closer and strongly lucido-granose, these granules abruptly wanting however on the basal slope, the humeri obliquely truncate, with a prominent tubercle at the posterior limit of the truncature; legs thick, the femora moderately clavate, uniformly densely cinereo-pubescent, sometimes partially fulvescent, the under surface also very densely and uniformly cinereo-pubescent, excepting the met-episterna and one or two small sternal spots of pale fulvous. Length (♂ ♀) 24.0–28.0 mm.; width 9.0–10.8 mm. Arizona (San Bernardino Ranch, Cochise Co.),—F. H. Snow. Four examples.

This species differs from *tessellatus* in having the flat frontal surface rather sparsely pubescent, with a fine fulvous line at each side along the eyes, in having longer antennæ, almost three-fourths longer than the body in the male, becoming gradually blacker basally through feebleness of the pubescence, the scape stouter and nearly glabrous, in having the spiculiform porrect processes of the antennal tubercles nearly parallel, in having the elytral punctures very much sparser, the ferruginous spots paler and more margined with white and the lateral white area not limited behind by a slightly darker region. In *tessellatus* the front is very densely clothed, the tubercular processes short and strongly oblique inwardly, the antennæ densely clothed to the base and the elytra with a feeble

darker cloud adjoining and intensifying the hind margin of the large lateral white spot; otherwise there is a rather close resemblance, except that *tessellatus* is decidedly smaller, about 20 mm. in length.

Oncideres Serv.

The described and undescribed species of this genus, which are represented in my cabinet, and apparently including all the known forms, excepting *pustulatus* Lec., which is exceedingly rare in collections, may be identified very readily by the following characters:

Pronotum with three shining tubercles in transverse line medially. Body rather narrow, elongate, cylindric, black, strongly shining where denuded, clothed with short cinereous vestiture which, on the elytra, forms feeble maculations but condensed in a transverse fascia occupying much less than a third the total length, from near basal third to slightly behind the middle, and numerous small spots of ferruginous color, only feebly subserial in arrangement; antennæ (♂) one-half longer than the body; prothorax narrowed at base, with a rather strong spiniform tooth laterally at basal third, somewhat strongly but sparsely punctate, the vestiture not dense, coarse; elytra parallel, together rounded at tip, strongly, not very closely punctate, the punctures becoming closer, coarser and evidently though not strongly graniferous basally; antennæ slender, pale, becoming black basally, the scape with sparse decumbent ashy hairs and with the usual fringe of longer hairs beneath. Length 12.5–14.0 mm.; width 3.8–4.8 mm. Texas (El Paso) and Arizona (Cochise Co.). **trinodatus** n. sp.

Pronotum without three denuded tubercles.....2

2—Prothorax with a moderate but acute denticle at each side near basal third, much narrower at base than at apex; elytral punctures at base not or scarcely at all graniferous; species of the southwestern faunal regions.....3

Prothorax not or moderately narrowed at base and never with more than a slight vestige of lateral spines or prominences; species of the Atlantic faunal region.....5

3—Body very slender, cylindric, the entire elytra densely clothed with cinereous pubescence, becoming abruptly bright ferruginous in clusters separated by sparser umber-brown hairs in basal sixth laterally and thence arcuately oblique to the scutellum, and with a rounded brown lateral spot at three-fifths, the small spots of denser pubescence white, except a few posteriorly, which are ferruginous. Length (♂ ♀) 11.5–13.0 mm.; width 3.4–4.2 mm. Arizona (Cochise Co.).....**quercus** Skin.

Body stouter, the denser cinereous pubescence of the elytra confined to a broad fascia, the small spots pale yellowish and not becoming paler in the cinereous band.....4

4—Punctures toward the elytral base notably coarse and close-set; impression of the fifth ventral of the female very feeble and not closely approaching the base; body larger, stouter; head somewhat swollen; antennæ (♀) with the third joint much longer than the fourth; prothorax very densely cinereo-pubescent; elytral cinereous band forming a dense zone from basal sixth to three-fifths, where it is abruptly limited except near the suture. Length (♂♀) 14.0–15.0 mm.; width 4.4–5.0 mm. Texas and Colorado. . . **texanus** Horn

Punctures toward the elytral base small and sparse, but little larger or stronger than posteriorly; impression of the fifth segment (♀) deeper, sharply angulate anteriorly and virtually attaining the base of the segment; body black, much smaller, not so stout; antennæ (♀) very slender, black, but slightly longer than the body, the third joint only very little longer than the fourth; prothorax one-half wider than long, with a rounded swollen glabrous central spot, not visible in *texanus*, and outside of which over the disk there are some sparse and moderate punctures, the pubescence not dense; elytra two and two-fifths times as long as wide, parallel, together rounded at tip, with small but deep and rather sparse punctures, the cinereous band as in *texanus* but much more nubilous, the hairs not dense enough to obscure the punctures; abdomen rufescent about the entire periphery except at base; legs extremely short, the hind tarsi nearly one-half longer than the tibiæ, being even relatively longer than in *texanus*. Length (♀) 10.8 mm.; width 3.2 mm. Texas (Brownsville) . . . . . **subtropicus** n. sp.

5—Depression of the fifth ventral segment (♀) deep and sharply marked, broadly obtuse anteriorly and occupying only about apical half of the segment; color piceous, clothed not very densely with cinereous pubescence forming a broad fascia on the elytra from about basal fourth to three-fifths and not at all sharply marked anteriorly, also having throughout the surface small sparse spots of ferruginous; antennæ pale, the scape blackish basally; prothorax (♀) fully three-fourths wider than long, only a little narrower at base than apex, sparsely and strongly punctured, with a very small flat central glabrous spot, the pubescence only moderately dense, coarse, variegated slightly with pale fulvous; elytra with strong and impressed, moderately close-set punctures, which at base become strongly, densely tuberculiferous, especially toward the humeri. Length (♀) 14.0–15.5 mm.; width 4.5–5.0 mm. Pennsylvania. . . . . **cingulatus** Say

A—Nearly as in the preceding but very pale in color, smaller in size and with the prothorax as wide at base as at apex and only about a fourth wider than long; elytral punctures less coarse and, toward base, coarsely and closely rugose only at and behind the humeri, immediately within which area they are simple, though coarse and sparse nearly to the base thence to the suture, feebly graniferous. Length (♂) 11.8 mm.; width 3.7 mm. New York.

pallescens n. subsp.

Depression of the fifth ventral (♀) acutely angulate anteriorly and about attaining the base of the segment; body rather shorter and

more obese than in *cingulatus*, the coloration similar; prothorax much narrower at base than at apex, short, two-thirds (♀) to three-fifths (♂) wider than long, less narrowed basally in the latter sex, less strongly punctured and more densely pubescent than in the preceding; elytra less strongly punctured than in *cingulatus*, the punctures basally coarser and closer but not at all graniferous except near the humeri, which are subinflated in the male, the vestiture and small ferruginous spots nearly similar, except that the cinereous hairs of the band continue to the base, the band not being at all defined anteriorly and much more feebly so posteriorly than in *cingulatus*. Length (♂♀) 15.2–15.5 mm.; width 4.7–5.0 mm. North Carolina (Southern Pines),—Manee..... **præcidens** n. sp.

As in many other parts of the Cerambycidæ, such for instance as *Pogonocherus*, *Pilema* and others, the female has more radical and diversified sexual abdominal characters than the male and is more useful in taxonomy. *Trinodatus* of the above table is identified in our lists as *putator* Thoms., but it is not that species, as shown by its much smaller size and by the color of the elytral spots, which are whitish in *putator;* the latter species belongs exclusively to the tropical fauna of southern Mexico and Central America.* *Texanus* Horn is a species so distinct from *cingulatus*, that it is rather surprising any suggestion of identity should have been made; *subtropicus* is probably the Brownsville form, placed by Mr. Schaeffer in his list as *texanus* Horn; it is however amply distinct in vestiture, sculpture, sexual characters and size.

It is remarkable that no reference seems to have been made to the very abbreviated legs in *Oncideres*, the extremely short hind tibiæ being very much more abbreviated than the tarsi.

Tribe HIPPOPSINI.

Spalacopsis Newm.

This is one of the most singular of the Lamiid types in its extremely slender body, with the elytra generally longer than the abdomen and in the long retracted front, with very prominent porrect vertex bearing the antennæ and small entire rounded eyes; it is the most highly specialized of the tribe. The species are evidently numerous in southern Florida and in Cuba; those in my cabinet—to which I have added *suturalis* by quotation from the original description—being definable as follows:

* Bates—Biol. Cent.-Amer. Col., V, p. 367.

Elytra with straight parallel sides; antennæ longer, with numerous long flying hairs beneath. (Subgen. **Euthuorus** Duval).....2

Elytra inflated posteriorly; antennæ not so long and with sparser flying hairs beneath. (**Spalacopsis** in sp.).....3

2—Linear, parallel, more feebly convex above, piceo-rufous, covered extremely densely with a crust of cinereous pubescence concealing all sculpture, except on certain parts of the elytra; antennæ in both sexes slightly longer than the body, very little longer in the male than in the female, the scape extending to the base of the prothorax and clothed with rather long brownish pubescence, which is so loose above as to fully expose the integument, prothorax one-half longer than wide, with a very broad medial and fine lateral indistinct vitta of white, the lateral along the summit of a feeble ridge; having also, at the centre of the disk, a deep foveiform puncture; elytra a fifth wider than the prothorax, parallel, oblique near the apices—very feebly (♂), more strongly (♀), the apices obliquely arcuately truncate from the external angles anteriorly to the suture and much broader in the male; surface with one sutural and two discal costules, the intervals between which have the vestiture alternately densely white and subdenuded, showing the sculpture, which is in geminate series of rather strong and very close-set punctures; outside the costules the convex surface descends more rapidly and is rather densely pale brunneo-pubescent, partially concealing the rows of punctures; apices concave. Length (♂ ♀) 10.0–10.5 mm.; width 1.2–1.3 mm. Florida (Biscayne Bay),—Schwarz.

costulata n. sp.

Linear but larger and stouter, similar to the preceding, except that the vestiture is paler cinereous and more uniformly dense, the scape longer and very densely clothed throughout, everywhere concealing the integument, the prothorax less cylindrical, more narrowed at apex and not quite one-half longer than wide, the central puncture similar but with the vittæ subobsolete, the disk transversely between the upper of the lateral ridges perfectly flat, not feebly concave along the middle as it is in *costulata;* elytra similar but flatter above and with the ridges finer and almost obsolete, the alternating densely pubescent and subglabrous areas—the latter relatively much shorter —less distinct, the apices nearly similar; apical abdominal segments (♂) diminishing much more rapidly than in the preceding, the fifth smaller, much less transverse and not extending so nearly to the elytral apices, the two black discal points on each segment less evident than in *costulata.* Length (♂) 12.8 mm.; width 1.65 mm. Florida (Palm Beach).....**scapalis** n. sp.

3—Form extremely slender; pubescence cinereous, the elytra variegated; head behind the antennæ shorter than the prothorax, with sparse non-lineate vestiture; prothorax shorter in proportion to the width than in the other species, piceous, with sparse non-lineate vestiture; scutellum minute, white, triangular; elytra nearly as in *suffusa,* the suture obscure white, the adjacent two rows of punctures brown from denudation, the third row with short white lines; there are also

many scattering spots brown from denudation; apices conjointly emarginate. Length 5 mm. Florida (Punta Gorda).
suturalis Ham.

Form more or less slender, but with the head behind the antennæ always as long as the prothorax and generally longer.....4

4—Elytra not evidently variegated, the close-set rows of punctures uniform and very distinct throughout; head and prothorax very densely cinereo-pubescent and obsoletely trilineate with paler tint, the antennæ (♂) slender, not as long as the body, with numerous very long flying hairs beneath, the scape two-fifths longer than the head and clothed not very densely with extremely short coarse hairs; prothorax equal in width to the head and slightly shorter, evenly cylindric, two-fifths longer than wide; elytra at base as wide as the prothorax, behind the middle nearly one-half wider, very evenly convex, without trace of ridges except laterally toward base, the punctures strong, very close in the even series, the pubescence of the intervals not very dense, very short, fusco-cinereous and but vaguely variegated by slight interruptions; abdomen with the short hairs unusually sparse, not concealing the rather strong sparse punctures; male with the fifth ventral short and transverse, broadly sinuato-truncate, the sides of the elytra posteriorly evenly arcuate to the acute apices, which are separated by a very small angular emargination. Length (♂) 6.0 mm.; width 0.75 mm. Florida (Lake Ashby),—Schwarz.....**suffusa** Newm.

Elytra variegated, with less distinct series of punctures and denser vestiture.....5

5—Antennæ with numerous very long flying hairs beneath; vertex before the eyes nearly as long as wide, with feebly converging sides; body moderately slender, evenly convex, obscure testaceous, the anterior parts clothed with a very dense cinereous crust; antennal scape extending to the middle of the prothorax, which is cylindric, two-fifths longer than wide, with a short central groove, the flanks with a whiter vitta and an impression near the apical and basal margins; scutellum white, equilatero-triangular; elytra at two-thirds from the base fully two-fifths wider than at the latter, the sides rounding broadly to the external apical angles, which are rather acute, the apices thence anteriorly and subrectilinearly oblique to the suture; surface with uneven geminate series of rather coarse and close-set punctures, which are partially visible through the dense pale brown vestiture, which is in great part sparse near the suture and, at about inner third, in the form of a whiter and irregularly much interrupted vitta; apices feebly concave. Length (♂) 9.6 mm.; width 1.25 mm. Texas.....**texana** Csy.

Antennæ with but few and much shorter flying hairs, the vertex before the eyes parallel and fully as long as wide.....6

6—Form moderately slender, convex and piceo-rufous, the moderately thick crust of pale brown vestiture on the anterior parts when removed revealing deep punctures, close-set on the head and less coarse and sparser on the prothorax; antennæ thicker than usual, subglabrous, not quite as long as the body (♂), the scape densely

brunneo-pubescent and extending nearly to basal third of the prothorax, the latter two-fifths longer than wide, with the sides oblique before the middle, the apex four-fifths as wide as the base; surface evenly convex, feebly so medially, the flanks even and with two white lines, the lower having a minute tubercle near the base; scutellum white, equilatero-triangular; elytra only feebly inflated behind, at two-thirds from the base barely a fourth wider, the sides thence very gradually arcuato-convergent to the rather narrow apex, which is angularly emarginate, the lobes obtusely rounded, with the dorsal impression very elongate; surface evenly convex, with very irregular clustered brownish vestiture, at many points showing the irregular geminate series of moderate punctures and with a white double vitta near inner third, much and very irregularly interrupted almost as in *texana*, forming two parallel successions of short white lines; abdomen coming very far from attaining the elytral tips, with the fifth segment in the example at hand small, scarcely more than half as long as the fourth and broadly sinuate at tip. Length (♂) 9.6 mm.; width 1.2 mm. Florida (east coast).....**stolata** Newm.

Form very much more slender but evidently less slender than *suturalis*, the size much smaller than in *stolata;* vestiture nearly similar, the cephalic punctures where visible much smaller and sparser than in *stolata* as above identified; vertex before the eyes somewhat longer than wide; antennæ much more slender, not quite as long as the body, the scape nearly similar; prothorax narrower, only very feebly narrowed at apex, two-fifths longer than wide and with a broad shallow median sulcus not attaining base or apex, the flanks with a white line, below which the vestiture is much confused; scutellum white, smaller and narrower, slightly elongate; elytra more inflated posteriorly, at two-thirds from the base fully two-fifths wider, the sides thence very evenly and gradually arcuate and converging to the very small, broadly rounded tips, which are separated by a very minute angular emargination, the dorsal impression longer than wide but small in size; surface with confused brownish and white, moderately dense vestiture, sparser near the suture, where the close series of strong punctures are in great part exposed, the white and denser vestiture more abundant and longitudinal basally and laterally but, behind the middle near inner third, forming short and widely separated lines; fifth ventral in the type small, half as long as the fourth, transverse, sinuate medially at tip, the latter more narrowed than in the above assumed representative of *stolata*. Length 6.7 mm.; width 0.7 mm. Florida (Palm Beach).....**pertenuis** n. sp.

The identification of sex in *Spalacopsis* proper is much less certain than in the subgenus *Euthuorus*, and I am not sure that the above determinations are always correct. My representative of *stolata* was taken possibly near Palm Beach and I have endeavored to prove that *pertenuis* is the male of it, but without success, as they are so remarkably different in the type of modification at the elytral

apices, in the stoutness of the antennæ and relative form and size of the body, in directions not suggested by the above noted male and female of *costulata*. This latter species is possibly the one identified as the Cuban *filum* by Hamilton, but having Chevrolat's description of that species at hand, I am unable to find many points of similarity; the elytral apices, for example, are said to be produced and obliquely truncate; they are rather prominent but not produced in *costulata* and *scapalis*, and the inner edge is thence very oblique and rounded anteriorly to the suture.* Both *costulata* and *scapalis* are allied much more closely to *grandis* Chev., but neither seems to be identical.

Tribe PHYTŒCIINI.

Saperda Fabr.

A very good account of our species, especially with reference to injuries to vegetation, was given by Mr. E. P. Felt (Bull. Univ. State of New York, June 1904) and all the species are there figured. There remains but little to do therefore in this genus, except to define a few forms, bearing deceptive resemblances to others, that were overlooked in Mr. Felt's revision. This particularly concerns the *tridentata* group, where my series may be resolved into two species, *tridentata* Oliv. and *imitans* Joutel and the following subspecies:

* I have recently had an opportunity to compare the male of *costulata* directly with the same sex of the Cuban *filum*, as represented by a good series in the National Museum, collected by Mr. Schwarz. Chevrolat describes the thoracic punctures of *filum*, and it was difficult to understand how this could be done if covered by so dense a crust of vestiture as in *costulata*. The comparison explains this very well, as the vestiture in *filum* does not form quite so dense a crust, and the punctures are therefore visible to some extent. *Filum* differs from *costulata* in its more slender form, shorter and very much more slender antennæ, with shorter, more slender and even less pubescent scape, less costulate elytra and transversely truncate and not sinuate apex of the fifth male ventral; the elytral apices are of nearly the same form, but the dorsal concavity of the tips, so conspicuous in *costulata*, is almost obsolete in *filum;* in fact the two are abundantly distinct species. There are large specimens included in the museum series, which appear to be *grandis* Chev., but I have not identified them carefully; *scapalis* is also allied to *grandis* but is not the same, according to the description.

In the museum collection the type series of four examples of *suturalis* Ham., show that it is different from any species at present in my collection, these differences being expressed satisfactorily in the table.

Saperda tridentata ssp. **trifasciata** nov.—Similar to *tridentata* but rather more elongate, similarly ornamented with orange lines, the distance between the middle oblique fascia and the anterior usually much greater than that between the former and the posterior fascia; minute cinereous vestiture coarser and denser, frequently concealing the punctures; legs testaceous almost throughout, the tarsi black, the cinereous vestiture not so dense as in *tridentata;* antennæ fusco-testaceous. Length (♂♀) 8.8–14.0 mm.; width 2.4 –4.3 mm. Indiana. Fourteen examples.

The testaceous legs and partially rufescent under surface will readily distinguish this subspecies from *tridentata*, where the legs, under surface and antennæ are deep black, the abdomen rufescent laterally. In addition, the three elytral fasciæ in *tridentata* are subequally spaced longitudinally. The antennal scape is longer and paler than in *tridentata* and is less abruptly narrowed at base. The name *dubiosa* Hald., applies to certain small semi-denuded males of *tridentata*, as shown by the black antennæ; this latter character will distinguish it at once from the subspecies *trifasciata*.

The following is allied to *concolor* Lec.:

Saperda mecasoides n. sp.—Form, coloration and vestiture nearly as in *concolor*, but rather more slender and with shorter prothorax, on which the lateral whiter vitta is scarcely traceable; the antennæ (♀) are shorter, not quite three-fourths as long as the body, the outer joints much shorter than in *concolor* (♀), the tenth scarcely three times as long as wide; erect hairs at the sides of the prothorax very short, scarcely evident. Length (♀) 10.0 mm.; width 2.8 mm. New York (near the city).

Differs from *concolor* principally in the shorter antennæ and virtual absence of long erect bristling hairs at the sides of the prothorax, these being replaced by shorter hairs; the hairs along the under surface of the antennæ are extremely few in number. It is probable that the food habits of these two forms are different.

Saperda vestita Say, is subject to a certain amount of local variation. The Canadian representatives, for example, are usually shorter and relatively broader than those occurring from New York to Texas, and Prof. Wickham obtained a form on the southern shores of Lake Superior, which is relatively more slender and with more fuscous cinereous vestiture. From Illinois, I have a single male having the entire antennæ testaceous. These differences are recognizable in series but are too slight for record in nomenclature.

Lateralis Fabr. is usually very uniform in ornamentation, but in one example of my series there is an isolated oblique medial dash of orange on each elytron.

Mecas Lec.

The species of this genus are somewhat intermediate in appearance between *Saperda* and *Oberea* and are moderately numerous. The species described by Say under the name *Saperda inornata*, from the Missouri River regions, cannot be identified, the annulate antennæ and subacute elytral apices preventing any legitimate identification with *saturnina* Lec., where the antennæ are not annulate and the elytral tips broadly and evenly rounded, just as in *pergrata*. *Senescens* Bates, may be identical with the Mexican *Saperda cinerea* of Newman; of this I have no means of judging, but that it is the same as *inornata* Say is altogether improbable. Hamilton states, on other authority, that the *Saperda cana* of Newman, described from Florida, is the same as *saturnina*, but I am disposed to doubt this determination very strongly and therefore do not adopt it. It is rather to be supposed that *cana* does not extend from the warm moist climate of Florida to the semi-arid regions of Kansas; this would be highly improbable on general reasoning alone. The species represented in my cabinet, which include all but *cana*—if this be really a *Mecas*—and *femoralis* Hald., may be distinguished as follows:*

Tarsal claws not cleft, but with a small oblique acute tooth just beyond the middle.....2

Tarsal claws deeply cleft.....4

2—Body black, clothed densely above, beneath, on the legs and on the under surface of the subbasal antennal joints with short and uniformly cinereous-gray hairs, the erect hairs numerous and also grayish-white; front evenly convex, the lower lobe of the eyes very broadly rounded beneath; antennæ (♀) not quite as long as the body, black, clothed sparsely, except as stated, with very short and not at all dense fuscous hairs, the joints without trace of annulation, the fringe sparse; prothorax slightly transverse, widest and with the sides feebly swollen at basal two-fifths, thence a little more narrowed to the apex, which is not quite as wide as the base; surface evenly convex, rather sparsely, moderately and subevenly punctate, without trace of callous or glabrous spots; scutellum clothed like the elytra, the latter nearly two and one-half times as long as wide, parallel, only slightly wider than the prothorax, the apices very broadly and obtusely angulate; surface even, the punctures rather small and sparse; fifth ventral (♀) a third longer than the fourth, broadly sinuato-truncate, the discal stria fine, entire; last dorsal

* I have very recently received an example of *femoralis*, collected by Mr. Manee at Southern Pines, North Carolina; it is smaller than any other species and very distinct by reason of the less dense and very even vestiture and red femora.

feebly tumid and very obtusely angulate, densely cinereo-pubescent. Length (♀) 8.5–9.2 mm.; width 2.4–2.6 mm. Texas (Harris Co.,—R. Oertel, and Austin,—Csy.) ..... **cineracea** n. sp.

Body above less densely clothed with finer, shorter, more fusco-cinereous pubescence, the sutural margins densely pale cinereous or yellow . . 3

3—Prothorax even in convexity and surface, with small sparse punctures and trivittate with dense yellowish pubescence, having no trace of callous spots; antennæ slender, blackish, very evenly and inconspicuously clothed throughout with small fuscous hairs, the fringe coarse, moderate in length and sparseness; elytra coarsely and rather closely punctate, the punctures only a little smaller near the apices, which are evenly and broadly rounded; epipleura densely yellow-cinereous. Length (♀) 7.2–8.3 mm.; width 1.7–2.0 mm. Texas and New Mexico..... **marginella** Lec.

Prothorax more evidently transverse, not vittate but with five small shining callous spots; antennæ much thicker, the joints annulate with cinereous in nearly their basal halves above, entirely cinereous beneath; elytra sparsely, rather strongly punctate, much more finely toward the apices, which are evenly rounded, black, with fine yellowish-cinereous internal and external margins, the surface medially pallescent in the female, except laterally and basally. Length (♂ ♀) 9.2–11.0 mm.; width 2.5–3.0 mm. Kansas and New Mexico. **pergrata** Say

4—Body black, stouter, densely clothed throughout with uniform cinereous pubescence, the pronotum with two very small callous glabrous spots; elytra broadly and evenly rounded at the apices..... 5

Body narrower, unequally clothed, black, the head and prothorax in great part testaceous; elytral apices sharply angulate, being obliquely sinuato-truncate thence to the suture..... 6

5—Form subcylindric, very densely clothed with luteo-cinereous vestiture, the erect hairs rather short, numerous but cinereous; head fully as wide as any part of the prothorax, convex; antennæ (♀) a little shorter than the body, not annulate, clothed throughout beneath with pale ashy, and in great part above with dark brown, hairs, the fringe distinct; prothorax subcylindric, with but very feebly arcuate sides, almost as long as wide; elytra distinctly wider than the prothorax, parallel, abruptly and broadly rounding behind, the punctures nearly concealed but moderate in size and sparse; fifth ventral (♀) feebly impressed and deflexed apically, the medial stria fine and not distinct much beyond the middle, the pygidium feebly, evenly and broadly convex, densely cinereous, the apex very feebly and broadly angulate. Length (♀) 13.5–14.0 mm.; width 3.6–3.8 mm. Kansas..... **saturnina** Lec.

Form shorter, similarly densely clothed but with paler yellowish pubescence, almost concealing the small sparse punctures, the erect hairs extremely short, scarcely discoverable on the elytra and cinereous; head not as wide as the middle of the prothorax, the antennæ distinctly shorter than the body, shorter than in the preceding species, clothed throughout beneath with cinereous pubescence and above by a mixture of cinereous and brown, the latter predominating toward

the apices of the joints but without producing a distinct annulation as it does in *pergrata;* prothorax short, rather more than one-half wider than long, the sides swollen and subprominent just behind the middle, the two glabrous spots very clearly limited and distinctly tumid; elytra parallel, wider than the prothorax, each very broadly, evenly and semicircularly rounded at apex, the finer sutural and marginal striæ distinct; abdomen densely cinereo-pubescent, the fifth segment in the type a third longer than the fourth, deeply impressed in more than apical half, the impression transversely elliptic; pygidium feebly, evenly convex, broadly arcuate at apex. Length 11.0 mm.; width 3.2 mm. Kansas. .....**brevicollis** n. sp.

6—Body very elongate, narrow, only feebly convex above, black, the head and entire prothorax pale testaceous; erect hairs short, pale, a little longer toward base of the elytra; head not swollen, strongly, the front closely, punctate; antennæ (♂) not quite as long as the body, piceous, clothed with fine dark brown pubescence, largely cinereous beneath; prothorax opaque, convex, slightly transverse, with feebly and subevenly arcuate sides, the surface with very fine, not dense cinereous pubescence, parted by three broad, more deeply fulvous and glabrous entire vittæ, the erect hairs rather long, pale; elytra slightly wider than the prothorax, three and one-half times as long as wide, coarsely, rather closely punctate, only a little less finely apically, the punctures not at all concealed by the very short fine luteo-cinereous appressed hairs, the exterior discal elevated line moderately distinct; abdomen very minutely, sparsely punctulate, minutely, not densely cinereo-pubescent and (♂) with the sides of the last three segments broadly, densely sericeo-pubescent and paler, yellowish, the fifth segment with a large and very deep oval excavation; pygidium evenly rounded at apex. Length (♂) 12.0 mm.; width 2.8 mm. Texas.....**ruficollis** Horn

Body similar but not quite so elongate, deep black, the head and prothorax partly pale, the pubescence nearly as in *ruficollis*, the erect hairs everywhere shorter, the antennæ similar, three-fourths as long as the body (♀); head only very feebly swollen, the punctures coarse, finer on the front, all well separated, the color testaceous, the sides behind the eyes broadly, and a feeble median vitta, black; prothorax opaque, a fourth wider than long, the sides broadly and feebly swollen just behind the middle, the punctures coarse and close-set laterally, sparser medially and subobsolete in the pale areas; color testaceous, with a medial and broader juxta-coxal vitta black, and, on the sides, a large black anterior and another basal, spot of black, the latter dilated inwardly obliquely along the base and obsolete at the middle, the pale vittæ with a very small elongate area of fine minute ashy pubescence, elsewhere nearly glabrous; elytra almost as in the preceding but less coarsely and, toward tip, much more finely punctate; abdomen (♀) minutely, sparsely punctulate, very minutely, inconspicuously fusco-puberulent and with numerous palish coarse erect hairs throughout, the fifth segment two-thirds longer than the fourth, feebly sinuato-truncate but not reflexed at tip, the stria deep, extending nearly to the tip, the pygidium sharply

tumido-angulate at apex. Length (♀) 12.2 mm.; width 2.8 mm. Mexico (Durango City),—Wickham.....*vitticollis n. sp.

Ruficollis is of a common Mexican type and a number of allied species have been described by Bates and others, such as *laticeps* and *mexicana* of Bates and *rotundicollis* of Thomson, but I fail to find any description very well fitting *vitticollis* as above defined. Horn did not mention the dense fulvo-sericeous vestiture toward the sides of the last three ventral segments of the male in *ruficollis*, but it is described by Bates in the Mexican species. *Vitticollis* may be among the forms confused with *ruficollis* by Horn, but I have not seen his material; it is, at any rate, widely different from that species in the punctuation of the head, in the coloration and sculpture of the prothorax, in the shorter and less numerous erect hairs of the pronotum, less coarse elytral punctures and evident inner, as well as still much stronger outer, of the raised discal lines of the elytra; these divergencies are mostly of an asexual nature.

Amillarus Thoms.

This neotropical genus is introduced merely to announce a peculiar form, which I have had undetermined in my collection for many years, having very slender antennæ and long elytral spines; it may be described as follows:

***Amillarus tenuicornis** n. sp.—Form very slender, moderately convex, black throughout, the entire legs and all the antennæ excepting the scape dull but pale testaceous, the scape deep black; pubescence above not dense and consisting of extremely minute appressed cinereo-fuscous hairs, condensed in three feeble vittæ on the prothorax, longer and denser beneath, albo-subvittate at the sides of the metasternum and along the posterior part of the met-episterna; erect hairs everywhere wanting; head as wide as the prothorax, with very convex eyes, which are unequally bilobed, finely faceted and widely separated; antennæ long and very slender, filiform, fully three-fourths longer than the body, subglabrous, sparsely fringed beneath, the scape slender, extending to the base of the prothorax, the third joint very long, half as long as the elytra and nearly a third longer than the scape, three to eight diminishing gradually in length; prothorax slightly transverse, bitruncate, slightly narrower at base than at apex, the sides feebly swollen and subprominent at the middle; surface subevenly cylindric, alutaceous, strongly but not very coarsely, loosely punctate; scutellum semicircular and having dense pale pubescence contrasting much with the blackish general surface of the elytra, the latter much wider than the prothorax, with rather angulate humeri, subparallel, the sides gradually converging and arcuate posteriorly to the very acute

spiniform angle, the apices thence anteriorly sinuate to the suture; punctures not very coarse or close, distinctly sublinear in arrangement; legs very slender, long, the femora not clavate, the basal joint of the hind tarsi longer than the next two combined; abdomen with sutures two to four deeper than the first. Length 11.0 mm.; width 2.5 mm. Isthmus of Panama (Darien).

From *apicalis* Thoms., this species differs very much in its uniform black color, more slender form, longer apical spines of the elytra and still more elongate and more slender antennæ.

Essostrutha fimbriolata Bates, is represented in my collection by four examples from Guerrero, collected by Baron; the sexual differences in coloration are very remarkable, the male being entirely yellow above, excepting the four rounded pronotal spots; in the female the size of the body is not quite so large, the pronotal spots subunited longitudinally and extending to base and apex, and the elytra are deep black in basal fourth and apical third. Another male example, from Ecuador, is smaller and shorter, ochreous-yellow, except the four pronotal spots, which however are not discal, as in the male of *fimbriolata*, but attain the apical and basal margins; it represents a distinct species.

Oberea Muls.

This holsubarctic genus contains a very large number of forms, which, because of some color variability, have caused a good deal of difference of opinion among systematists; but after studying my material attentively, the conclusion is forced upon me that the views of Dr. Horn are very conservative, while those of Dr. Hamilton can be characterized by no other term than irrational. In the following arrangement of the American species color is not made the basis of named taxonomic forms, unless accompanied by structural characters which can be recognizably described, including outline, sculpture, pubescence, special modifications of the elytral tips or in some sexual peculiarity. Six of the hitherto described forms—*oculaticollis* Say, *affinis* Harris, *tibialis*, *flavipes* and *myops* of Haldeman and *texana* Horn—are apparently missing in my material, which is moderately extensive; it may be arranged as follows:

Pronotum pale in color, with four black callous spots—disregarding the median line, which is frequently elevated medially.....2
Pronotum pale to black, with two black callous spots.....5
Pronotum without more obscurely colored callous spots.....16

2—Elytra deep black throughout, excepting a pale marginal area below the humeri, evenly and very moderately though closely punctate throughout, the raised lines very feeble, pruinose, with moderate cinereous hairs, the erect hairs extremely short; apices of the elytra rounded to very feebly obliquely subtruncate; sterna of the hind body and the greater part of the abdomen black; pygidium (♀) very convex, tumid and angularly pointed. Length (♂ ♀) 12.0–15.0 mm.; width 2.4–3.1 mm. California.....**quadricallosa** Lec.

Elytra never black.....3

3—Elytra with the inner of the two discal lines obsolete, the outer more than usually accentuated and, basally, including a broad scutellar region which is much more sparsely punctured than the remainder of the surface. Body rather broader than usual, parallel, only moderately convex, fuscous above, the under surface in great part black, the legs pale, except the black tarsi and tibial apices; head black, pale near the eyes, between the upper lobes and at base except medially; antennæ short, piceous-black basally, three-fourths as long as the body (♂); prothorax subcylindric, not quite as long as wide, the median line strongly tumid centrally; elytra pale at the sides basally, the pale area prolonged posteriorly in a narrow line along the margin almost to the apex and along the discal ridge nearly to the middle, also along the basal margin including the scutellum, the humeral callus black; punctures coarse and deep, small apically, the apices rounded; pubescence ashy but short and sparse; surface between the punctures dull in lustre, micro-rugulose; male with the last true dorsal segment as wide as long, only moderately convex and with the parallel subbasal ridges widely distant, obtuse and feeble. Length (♂) 13.6 mm.; width 3.0 mm. Pennsylvania. [Louisiana Lec.].....**schaumi** Lec.

Elytra with the inner of the two discal lines feeble but evident, the outer less prominent than in *schaumi*, the punctures basally toward the scutellum not sparser than elsewhere.....4

4—Form more slender than in *schaumi*, uniform pale brown throughout above, the head nearly as in *schaumi*, the elytra each with a small black discal spot at apex; under surface and legs nearly similar; antennæ even shorter, similar in coloration; prothorax nearly similar but with the sides slightly swollen medially and the pubescence coarser and denser; elytra very coarsely punctate (♂), or moderately but more closely (♀), the humeral callus with a minute black spot; pubescence abundant, giving a strongly pruinose effect, the apices strongly rounded to feebly subtruncate; last dorsal segment (♂) more narrowed and more rounded at apex than in *schaumi* and with the subbasal prominences obsolescent; concavity of the fifth ventral shallower and more pubescent; pygidium (♀) less convex than in *quadricallosa* and with the apex not acutely angulate but obtusely lobiform. Length (♂ ♀) 10.5–13.0 mm.; width 2.2–2.8 mm. Missouri (near St. Louis).....**pruinosa** n. sp.

Form still more slender and elongate, pale ochreo-ferruginous throughout, the head without black maculation, the black thoracic spots small, the elytra with the humeral callus alone black, the under surface

very pale like the upper, with a black area near the sides of the metasternum and on the met-episterna; tarsi and tibial tips blackish; pubescence minute, not dense, giving a very feeble pruinose effect; antennæ longer and more slender than in the two preceding, being nearly as long as the body (♂); prothorax as long as wide, cylindric, with a feeble swelling at the middle of the sides, the callous spots not large but all strong, the median line tumid, except near base and almost apical half, the punctures coarse and rather close-set; elytra with the punctures very coarse, close-set, serial, becoming confused and smaller apically as usual, the apices truncate, with broadly rounded external and minutely dentiform sutural angles; last dorsal segment (♂) longer than wide, feebly trapezoidal, with broadly rounded apex, rather convex and with the subbasal ridges strong; cavity of the fifth ventral deep but pubescent like the rest of the surface. Length (♂) 10.8–11.0 mm.; width 2.2–2.3 mm. Kansas. **ferruginea** n. sp.

5—Elytra and entire upper surface uniformly pale ochreo-testaceous throughout, the head a little darker testaceous; under surface, legs, tarsi and antennæ very pale, the sterna and subbasal parts of the abdomen sometimes infumate, the scape also a little darker in shade. Body very slender (♂), a little shorter (♀), the antennæ slender, distinctly shorter than the body in both sexes; prothorax transverse, a fourth to third wider than long, the sides feebly and medially arcuate; surface with moderate punctures, only feebly shining, the median line not tumid as it is in the preceding group, the two callous spots strong but only darker testaceous in color (♂) or black (♀), the middle of the base with a small point similarly varying in color; elytra long and slender, sinuato-truncate and bidenticulate at apex, having series of rather coarse separated punctures, not smaller but confused apically, the cinereous vestiture short, sparse and not very evident; pygidium (♀) strongly tumid and convex discally toward apex, the ridges of the last dorsal (♂) strong and subacute, the fifth ventral with a moderate subtriangular impression, which is evident also in the female though much smaller and feebler. Length (♂ ♀) 9.0–11.0 mm.; width 1.65–1.9 mm. Maine (Monmouth and Wales), C. A. Frost. . . . . **pallida** n. sp.

Elytra pale, with dark marginal and sutural vittæ. 6

Elytra deep black throughout, less uniformly so only in *exilis*. 7

6—Form slender, rather elongate, parallel, flattened above, pale flavo-testaceous, the head normally pale, sometimes with feeble and limited blackish marking, the prothorax with three black spots, one at the middle of the base; scutellum and a lateral and sutural vitta—the latter not attaining the scutellum—on each elytron blackish, the margin pale near the humeri; legs and coxæ pale throughout in both sexes; under surface black, the abdomen (♂) with the last two segments abruptly pale, except a large discal area of the fifth, also nubilously pale at base, or (♀) wholly black, except at the sides of the fourth and often the third segment; pubescence ashy but not dense above, the erect hairs short and pale, closer but not very dense beneath; antennæ slender, about as long as the body, pale, the first

three joints black, the others abruptly black at apex; prothorax cylindric, as long as wide (♂) or slightly transverse (♀); elytra barely three times as long as the head and prothorax together, with series of coarse punctures, confused and a little smaller apically, the apices rectilinearly and somewhat obliquely truncate, the inner, but only seldom the outer, angle, minutely denticulate; pygidium (♀) broadly convex and swollen discally but only very obtusely prominent behind. Length (♂ ♀) 9.5–11.8 mm.; width 1.8–2.3 mm. New York to District of Columbia. [♂ *mandarina* Fabr., ♀ *amabilis* Hald.]..... **tripunctata** Swed.

A—Outline, coloration, sculpture and vestiture nearly similar, the body not quite so elongate and the punctures very slightly less coarse, the black spot of the fifth ventral (♂) virtually wanting, the fourth and fifth (♀) pale at the sides and apex, the pale color extending to abdominal base at the sides; head pale throughout; antennæ differing conspicuously, not deep black basally and generally scarcely darker, with the other joints infuscate; gradually pale toward their bases; pygidium (♀) more pointed behind. Length (♂ ♀) 10.0–11.5 mm.; width 2.0–2.2 mm. Indiana, Illinois and Mississippi (Vicksburg)..... **intermedia** n. subsp.

B—Outline nearly as in *intermedia;* coloration, sculpture and vestiture almost identical, except that the head is deep black, the black area sharply and abruptly limited on the occiput by a broadly and posteriorly angulate line, the angle attaining the prothorax, the black discal spots of the latter unusually small; antennæ (♀) not quite as long as the body, slender, filiform, extremely pale in color, the first two joints alone darker and blackish, the remaining joints abruptly black at their apices as in *tripunctata.* Length (♀) 10.7 mm.; width 2.1 mm. North Carolina (Asheville)..... **appalachiana** n. subsp.

Form, sculpture and vestiture nearly as in *tripunctata* but much more elongate, the coloration differing decidedly; head deep black, the black limited on the occiput by a straight (♂) or posteriorly angulate (♀), sharply marked line; prothorax nearly as in *tripunctata,* except that the basal spot is not rounded or transversely oval but in the form of a short narrow vitta; elytra (♂) four times as long as the head and prothorax combined, infuscate throughout except basally, the sutural bead and the sides, except the lower edge basally, blacker, the scutellum differing greatly in being very pale like the surrounding surface, and not black as it is in *tripunctata* and related forms; legs pale; under surface (♂) wholly pale, excepting a rounded spot just outside the anterior coxæ, all the metasternum and side-pieces excepting a large transverse anterior median area, narrow sublateral spots on the second and third and the entire fifth segment except at base, which are deep black, the black areas sharply defined, or (♀) entirely pale, except that the black of the male is more extended, forming two subapical spots on the first segment, occupying all the second and third except at the sides and the fifth except at the sides and base; pygidium (♀) but feebly protuberant medially; antennæ (♂) five-sixths, or (♀) much shorter and less than four-fifths, as

long as the body, blackish, feebly and just visibly pallescent distally, where each joint has only its extreme tip a little more blackish. Length (♂ ♀) 12.0–13.0 mm.; width 2.0 mm. New York (Bluff Point, Lake Champlain) ..... **prælonga** n. sp.

7—Under surface, legs and antennæ throughout deep black except in the male of *exilis*, the elytral tips obliquely sinuato-truncate and distinctly bidenticulate as a rule 8

Under surface and legs, except the tarsi and tibial apices, pale rufo-ferruginous, the elytral apices rounded, the sutural angle alone minutely denticulate 15

8—Elytra (♂) pale at base at each side of the scutellum, the pale tint sometimes extending posteriorly along the median part of each in a faintly pallescent nubilous vitta. Body very small and slender, black, the antennæ deep black, the pale prothorax narrow, cylindric, with feebly arcuate sides, sometimes even a little longer than wide, the black spots large, the entire base broadly black; elytra with rows of coarse punctures but little confused apically, flattened above, feebly inflated posteriorly, the fine cinereous hairs very inconspicuous, the erect hairs short, blackish; lower margin toward base pale; entire under surface, except the prosternum before the coxæ, deep black, feebly cinereo-pubescent, the abdomen distinctly but rather sparsely punctate laterally; legs short, entirely blackish-piceous in two examples, the anterior wholly pale, the second and third pairs blackish, with the femora at base and apex and the tibiæ basally pale, in the third example. Female much larger and stouter than the male, with the punctures everywhere more crowded, the coloration more intense black above and beneath, the legs deep black and the prosternum wholly pale anteriorly. Length (♂ ♀) 8.3–10.8 mm.; width 1.4–2.0 mm. Pennsylvania (Harrisburg, Highspire and Heckton Mills),—W. S. Fisher ..... **exilis** n. sp.

Elytra deep black throughout, never pale at base 9

9—Pronotum as in *exilis*, with a parallel-sided transverse black fascia at base, often abruptly interrupted at the sides; antennæ feebly thickened distally when compared with the basal part of the third joint 10

Pronotum with a longitudinally shorter basal fascia, frequently not attaining the sides and with its anterior margin not transverse but very broadly angulate; antennæ strictly filiform 12

Pronotum with a rounded basal black spot adjoining the scutellum; antennæ filiform 13

10—Head deep black. Body small and shining, strongly, clearly, deeply and moderately closely punctate; antennæ evidently shorter than the body; prothorax nearly as long as wide, coarsely, rather closely punctate; elytra distinctly inflated posteriorly and with the oblique apical truncature unusually and rather deeply sinuate, having series of close-set deep coarse quadrate punctures, the ashy hairs sparse and inconspicuous, the erect hairs numerous, blackish; strong punctures of the abdomen wholly lateral and beginning rather abruptly; legs piceous to black. Length (♂) 8.3 mm.; width 1.5 mm. District of Columbia ..... **delicatula** n. sp.

Head pale to fuscous 11

11—Body smaller and notably slender; head not closely punctate, the punctures smaller and feebler than in the preceding; antennæ notably thickened distally; prothorax a little longer (♂) to shorter (♀) than wide, more sparsely and less coarsely punctate than in the preceding; elytra only very feebly inflated apically, with rows of coarse subquadrate punctures, the outer of the discal raised lines rather strong, the fusco-cinereous hairs moderately distinct, the erect hairs very evident; legs blackish or piceous; carinæ of the last dorsal segment (♂) rather approximate, strong; pygidium (♀) moderately convex, much narrower and more pubescent than in the preceding. Length (♂ ♀) 8.5–9.8 mm.; width 1.4–1.7 mm. North Carolina (Southern Pines),—Manee..... **perspicillata** Hald.

Body broader and with the cinereous vestiture much more distinct; head strongly, rather closely punctate and with cinereous hairs; antennæ (♂) nearly as long as the body, slightly shorter (♀); prothorax more nearly similar in the sexes, as long as wide (♂) to a little shorter (♀), the sides feebly arcuate, the punctures strong, not dense; elytra four times as long as wide to a little less, distinctly inflated apically, the punctures serial, confused apically, close-set, coarse and subquadrate, the apical truncatures narrow, sinuate, strongly bidenticulate; legs black to piceous; last dorsal (♂) with the subbasal carinæ widely separated and feeble, the pygidium (♀) moderately swollen, feebly angular posteriorly. Length (♂ ♀) 9.2–9.8 mm.; width 1.7–1.9 mm. Utah (Nephi) and Idaho (Pocatello),—Wickham..... **montana** n. sp.

12—Form extremely slender, subcylindric, moderately shining; head black, dilated, strongly, rather closely punctate, with a feeble longitudinal impression on the vertex, which is impunctate; antennæ (♂) much shorter than the body, slender, filiform, clothed with fusco-cinereous pubescence, the long hairs and fringe well developed; prothorax slender, longer than wide, evenly cylindric, much narrower than the head, moderately punctate, opaque, the erect pale hairs numerous, the basal spot triangular, half as wide as the base; elytra slender, feebly inflated apically, convex throughout the width, the raised lines subobsolete, the serial punctures coarse as usual, much confused at apex, the truncatures almost transverse, rectilinear and scarcely at all bidenticulate; abdomen very slender, cylindric, the punctures strong laterally, becoming rather coarse toward base; legs short, stout, black. Length (♂) 9.5 mm.; width 1.6 mm. Pennsylvania (Harrisburg),—W. S. Fisher..... **filum** n. sp.

Form very slender, linear, rather shining, the pubescence sparse, fusco-cinereous and scarcely visible; head shining, convex, fuscous, the punctures deep and distinct but not very coarse or close; antennæ very slender, almost as long as the body (♀); prothorax slightly shorter than wide, a little narrower at base than at apex, the punctures rather coarse but widely separated; elytra feebly swollen apically, the serial punctures coarse, subquadrate, much confused apically, the truncatures oblique, sinuate and strongly bidenticulate;

abdomen shining, the minute sculpture feeble and not dense, the punctures strong only very near the sides; pygidium (♀) simply and moderately convex; legs piceous. Length (♀) 9.2 mm.; width 1.45 mm. North Carolina (Asheville). [Georgia—LeConte].
basalis Lec.

Form shorter and much less slender, the cinereous hairs more numerous, paler and very evident; head fuscous to paler, rather finely and sparsely punctate; antennæ truly filiform, slightly (♂) to much (♀) shorter than the body, notably ashy-pubescent distally; prothorax cylindric, with distinctly arcuate sides, a little shorter than wide (♂) to nearly a third wider than long (♀), the punctures indistinct, not coarse; elytra feebly swollen apically, more strongly (♀), the surface flattened medially, with even rows of coarse subquadrate punctures, confused apically (♂), or with all the punctures inside the feeble outer raised lines more or less confused (♀); apices obliquely and rectilinearly truncate, the outer angle not dentiform; legs piceous; abdominal punctures gradually stronger toward the sides. Length (♂♀) 7.8–9.2 mm.; width 1.3–1.85 mm. Iowa (Keokuk) and Illinois (northern).....**iowensis** n. sp.

13—Head pale like the prothorax or but little darker, the front sparsely and not very coarsely punctate; pygidium (♀) strongly convex. Body larger in size than usual in this group; antennæ filiform but not very slender, very nearly as long as the body (♂), black, fusco-pubescent; prothorax nearly as long as wide to a little shorter, the sides subprominent just behind the middle, subopaque, not very distinctly but coarsely punctate; elytra but feebly dilated apically, more distinctly and abruptly so (♀), the apical truncatures but slightly oblique and not distinctly denticulate, the punctures coarse, subquadrate, confused apically and smaller and confused near the suture, especially in the female, the ashy hairs fuscous and indistinct, the erect hairs very short; abdomen with the stronger lateral punctures smaller than in the preceding species; carinæ of the last dorsal (♂) strong and very acute; legs black to piceous. Length (♂♀) 11.2–14.8 mm.; width 2.2–2.9 mm. North Carolina (Southern Pines),—Manee.....**insignis** n. sp.

Head black; front strongly and closely punctate; pygidium (♀) much less convex.....14

14—Form slender; head black; antennæ distinctly shorter than the body in both sexes, slender, filiform, black; prothorax cylindric, nearly as long as wide, rather sparsely but strongly punctate; elytra nearly as in the preceding, the punctures irregular only very near the suture, broadly so apically, the truncatures oblique, sinuate, strongly bidenticulate; legs short, black; punctures toward the sides of the abdomen fine. Length (♂♀) 11.0–12.0 mm.; width 1.8–2.1 mm. Pennsylvania. [*tripunctata* Fabr. nec Swed.].....**bimaculata** Oliv.

Form still more slender, the ashy pubescence very distinct, the lustre subopaque; front strongly, very densely punctate and puberulent; antennæ slender, filiform, much shorter than the body, black but becoming fusco-testaceous distally and somewhat ashy-pubescent, with the joints gradually slightly paler toward their bases; prothorax

rather longer than wide (♂), with feebly arcuate sides, strongly, closely punctate: elytra very elongate, feebly swollen and only very near the apex, flattened inside the unusually prominent external discal lines, the punctures only moderately coarse, subquadrate, close-set in series, much confused posteriorly and becoming notably smaller apically, the truncatures very oblique and deeply sinuate, the outer tooth unusually acute and prolonged; legs slender, black; punctures toward the sides of the abdomen close-set and unusually strong, becoming very coarse basally; last dorsal segment (♂) with the carinæ distant and unusually feebly elevated but with finely acute summits. Length (♂) 10.3 mm.; width 1.6 mm. North Carolina (Southern Pines),—Manee.....**dolosa** n. sp.

15—Body stouter than usual, the elytra flattened above, pale ferruginous in color and sexually similar, the elytra, excepting the epipleura—faintly pale at base.—the entire antennæ, the tarsi and tibial apices, deep black; pubescence ashy, distinct on the elytra, giving a pruinose effect; head evenly convex, strongly, rather closely punctate; antennæ much shorter than the body in both sexes; prothorax swollen at the sides behind the middle, nearly as long as wide (♂) or distinctly transverse (♀), coarsely and closely punctate, without black maculation except on the two callous spots; scutellum pale, truncate; elytra slightly wider than the prothorax, feebly swollen posteriorly, having series of very coarse and moderately close-set subquadrate punctures, evidently confused and less coarse apically; pygidium (♀) only very moderately and subevenly convex; last dorsal (♂) with the carinæ moderate, somewhat converging basally; legs short but, as usual, with the hind tarsi shorter than the tibiæ. Length (♂♀) 13.5–14.0 mm.; width 2.8–3.0 mm. Texas.....**ocellata** Hald.

A—Similar to the preceding in coloration, sculpture and vestiture, except that the head and pronotum both have a large discal area black, that on the latter involving both callous spots but not attaining the flanks or base, the punctures decidedly less coarse and not so close-set; hind body not so elongate, the elytral punctures not quite so coarse and more elongate in form. Length (♂♀) 9.8–13.5 mm.; width 1.8–2.8 mm. North Carolina (Southern Pines),—Manee.....**plagiata** n. subsp.

16—Form somewhat as in *ocellata* but still larger and stouter and with the cinereous vestiture of the elytra denser, giving a strongly pruinose effect; coloration throughout as in *ocellata*, excepting that the elytral flanks and epipleura basally are more distinctly pale and the entire tibiæ, as well as the femoral apices, black; head coarsely, densely punctate; antennæ filiform, long, about as long as the body (♂) to but little shorter (♀); prothorax slightly transverse in both sexes, the sides subprominently swollen behind the middle, the punctures coarse, subconfluent, wanting in flattened tumid vacant spaces representing four callous spots; scutellum pale, transverse, truncate, densely pubescent; elytra flat above, unusually expanding toward base and dilated apically, the apices obliquely truncate but not bidenticulate; punctures impressed, relatively much less coarse and more widely separated than usual, rather fine and confused apically;

pygidium (♀) strongly convex but not protuberant posteriorly; carinæ of the last dorsal (♂) long, strong and parallel; abdomen much more finely punctured than in *ocellata*. Length (♂♀) 14.0–17.0 mm.; width 3.1–3.7 mm. Pennsylvania (Franklin Co.), West Virginia and North Carolina (Southern Pines). [*plumbea* Oliv.] ..... **ruficollis** Fabr.

Form shorter and relatively still broader, the disk of the elytra broadly flat or slightly concave, the color very different, pale ochreo-ferruginous throughout, the elytra each with a black vitta at the summit of the flank, the tarsi and the tibiæ except basally, black, the antennæ piceous-black basally; pubescence short, sparse and very inconspicuous; head and prothorax with strong close punctures, the latter not as long as wide (♂) to distinctly wider (♀), the parallel sides but feebly and subevenly arcuate; vestiges of the callous spots, two in number, very feeble; elytra rather short, only between three and four times as long as wide, coarsely, serially punctate, the punctures very deep, well separated and rounded, smaller and confused apically and near the suture; exterior of the raised discal lines much stronger and more nearly entire than in any other species; apices obliquely truncate, scarcely at all bidenticulate; pygidium (♀) very moderately convex, not at all protuberant. Length (♂♀) 10.0–12.5 mm.; width 2.0–2.7 mm. North Carolina (Southern Pines),—Manee ..... **gracilis** Fabr.

The above study has had as its object the most practical arrangement for the identification of the species; *ruficollis*, for example, is really more closely related to *quadricallosa* than to any of the intermediate forms of the table, the most evident difference being the absence of black coloration on the four thoracic callous spots of the former. In the difficult *bimaculata* group, I am unable to state just which may ultimately prove to be true species, or designate at present those that should hold a lesser rank; they cannot all be subspecies of *bimaculata*, for some of them, such as *insignis*, *dolosa* and *exilis*, have well marked distinctive structural peculiarities and *perspicillata* has less filiform antennæ; so I will leave them as announced until further light can be shed on the subject by means of carefully collected material.

The species in *Oberea* are variable in color, it is true, but they have not the almost illimitable fortuitous variability that has been ascribed to them by those who have not even taken the trouble to separate the sexes and note the purely sexual divergencies of coloration; it is this apparently erratic variability that has chiefly served to discourage nearly all investigation of the genus. I find that the variability they possess has its limits, and that these are much less

extended than supposed, the only point to be mentioned being the fact that species or subspecies, whatever may be the meaning of the latter term—in my own opinion largely without meaning in our present stage of knowledge—are, as in *Tetraopes*, very much more numerous than hitherto admitted. A genus such as these must either be an undecipherable chaos of few arbitrary composite units, or a systematic succession of a greater number of more clear-cut units, until the limits of variability become really known. I prefer the latter manner of solving the difficulty, provided there be any structural basis for the finer subdivisions.

There are even more unaccountable eccentricities of color variation in *Mecas pergrata* than in any *Oberea* that I have seen; for example, in one male before me the fifth ventral segment is wholly black, while in another male from the same locality and apparently not differing in any other way, the fifth segment is bright red, the basal black part separated by an abrupt line. In the *Oberea bimaculata* series, I find that in some species the head may be as pale as the prothorax to nearly black, but in the latter case the dark color is nubilous and not of a deep black and separated from the pale basal part by a sharp line of demarcation, as it is in some allied but apparently distinct species. The coloration of the legs, mentioned above under *exilis*, like that of *Parallelina subargentata*, is another unexplainable instance of color dimorphism—I would rather use this term than variability in such cases—for it does not seem to be sexual in origin. Of course I may have confused two different taxonomic units, which however seems inconceivable, either in this case or that of *Mecas pergrata*.

Tribe TETRAOPINI.

This tribe, as organized by Bates, seems to be sufficiently distinct from the Phytœciini by reason of the very broadly and completely divided eyes. The three genera known to me are *Tetraopes*, *Phœa* and *Tetrops*.

Tetraopes Serv.

In North America, as far to the southward as Central America, this is a large genus of peculiarly massive longicorns, frequently closely allied among themselves but at the same time exhibiting considerable diversity, especially in ornamentation and vestiture.

The short cinereous clothing is always dense beneath and on the legs, and is also generally distinct although always less dense on the upper surface and antennæ.

In the following review I have been unable to recognize *oregonensis*, *basalis* or *mancus* of LeConte. The first is nearly 14 mm. in length, has the prothorax abruptly elevated medially, the discal spots of the elytra in the usual position but very small and often wholly obsolete; it is compared with *basalis* under the original description, as also having the basal antennal joint red,—a very unimportant feature however,—and is said to differ by having the thoracic umbo abruptly elevated, indicating that it is not abruptly elevated in *basalis*, though in the original description of the latter, founded on an example from the Sierra Nevada, the sides of the prothorax are said to be "subito depresso"; but, more important still in regard to *basalis*, the fourth elytral spot, meaning probably the posterior discal spot, is said to be "placed quite at the margin," which would cause it to be an exception in the entire genus and equally an exception if the fourth spot were the post-humeral; just before the quotation given, it is said that the spots have the same position as in *femoratus!* That the spot may not be normally placed in *basalis*, however, is perhaps indicated by the care taken, under the description of *oregonensis*, to state that the spots "are in the usual position" in that species. *Mancus*, from the Tejon region of southern California, seems to have the usual coloration and to be briefly nigro-pilose, the thoracic umbo abruptly elevated, the elytra moderately punctate and with only the humeral and post-median spots, as in *quinquemaculatus*, the legs wholly black as in that species, the antennæ annulate with cinereous and the scape tinged with red. I have one example which comes very close to this diagnosis, agreeing in every way except as to the black elytral hairs and the annulated antennæ, neither of these characters being evident; it is named *omissus* below. That *mancus* should have been united with *femoratus* as a variety is not readily comprehensible; it is evidently a fully distinct species.

Basalis is not considered at present, as it seems to be an isolated type, probably peculiar to the Sierra Nevada region, though, in most collections, any specimen with a red scape is liable to be found under that name. *Oregonensis* is also omitted, as I do not have

anything answering very well to the description in the material at hand among a number of west coast forms. Both are valid species, however, and apparently not closely related to *femoratus*. The coloration of the antennal scape is one of the most variable features of the western species, and in the large and strikingly distinct *velutinus*, for example, it is virtually wholly black in one female but bright red with black apex in the other two females and single male. Similar inconsistencies are noticeable elsewhere. The posterior of the four elytral spots is the most persistent and is never obsolete. So far as known to me the species are as follows:

Elytra with a large common black chevron just before the middle, sometimes united along the suture with a still larger apical chevron, the anterior angles of which are the usual post-median, deeper and more velvety, black spots, the post-humeral spot invariably wanting..2

Elytra without extended black maculation, each having a humeral, post-humeral, anterior juxta-sutural and post-median discal spot of black, one to three of the anterior spots sometimes wholly obsolete but only in the *femoratus* group, the humeral only very rarely even there, the post-median extremely constant and never wanting, the post-humeral the most variable in form.....7

2—Humeral, post-humeral and anterior juxta-sutural spots invariably wanting, the only elytral spot being that at the anterior external limits of the posterior black chevron; body very small in size.....3

Post-humeral and anterior juxta-sutural spots alone invariably wanting.5

Post-humeral spot alone wanting, the other two discal spots transversely lineiform; pronotum without the usual four black spots.....6

3—Head black. Body black, cinereo-pubescent throughout and nigro-pilose; prothorax with the sides at the middle abruptly but not strongly prominent, marked by four very black spots, the apex and base red; anterior black chevron of the elytra broadly joining the posterior along the suture; antennæ black, not at all annulated. Length 8.0 mm. Texas (Llano Estacado).....**discoideus** Lec.

Head wholly bright red, the prothorax black, not red at apex or base..4

4—Body moderately slender, convex, densely cinereo-pubescent and with many long erect black hairs, the under surface, legs and antennæ deep black, the last with very numerous erect black hairs beneath and with the bases of the joints finely annulate with cinereous; prothorax nearly one-half wider than long, the middle of the sides broadly rounded and only feebly prominent, the subbasal constriction stronger than the subapical; surface black throughout, very rarely with a small red cloud at the sides just before the middle, the punctures rather small, very sparse, the four velvety-black spots distinct, the two longitudinal pairs separated by a flat, elongate-oval surface, which is very abruptly but only extremely slightly elevated; elytra very coarsely though not at all closely punctate, more finely toward tip, the small cinereous hairs sparse

on the red parts, dense on the black, excepting the velvety-black spot; semi-erect hairs of the under surface shorter, sparser and cinereous. Length (♂ ♀) 7.0–8.0 mm.; width 2.7–2.9 mm. New Mexico (Fort Wingate). Eight examples.....**nigricollis** n. sp.

Body similar to the preceding but rather more depressed, slightly narrower and smaller, the antennæ more slender and not at all annulate, the prothorax much more coarsely and closely punctate on the similarly very feebly elevated medial part, but more finely and sparsely laterad, the sides nearly similar, the uniformly black color however variegated by a quadrate red spot at each side of the apex; elytra nearly similar, except that the cinereous vestiture is more uniformly, though not very densely, distributed throughout. Length (♂ ♀) 5.3–7.7 mm.; width 2.0–2.5 mm. Arizona (locality unrecorded). Three examples.

nanulus n. sp.

5—Body much larger and stouter than in the three preceding, convex, bright red throughout above, except the four pronotal spots, the humeri and the two sutural chevrons, the anterior of which is sometimes much reduced in size and very rarely almost obsolete; under surface, legs and antennæ black, the anterior legs sometimes rufo-piceous and the antennæ not at all annulate; erect black hairs of the upper surface shorter, finer and more numerous than in the preceding section, the antennal fringe much less developed, disappearing apically; prothorax one-fourth to one-half wider than long, the sides obtusely and moderately prominent at the middle, the surface only very finely and sparsely punctulate and with the central elevation gradually formed, its lateral limits barely traceable; elytral punctures relatively rather small, moderately close-set. Length (♂ ♀) 7.8–11.0 mm.; width 2.6–4.2 mm. Long Island, New Jersey and Pennsylvania. [*arator* Germ.].....**canteriator** Drap.

6—Form stout, convex; color deep black throughout, with erect black hairs and cinereous vestiture, the head red, the red elytra covered in great part by the largely expanded and suturally coalescent black chevrons, the posterior not acuminate antero-laterally in the usual posterior rounded black spots as in all the preceding, but truncate anteriorly along the posterior spots, which are transversely lineiform, the anterior juxta-sutural black spots also transversely lineiform; antennæ black, not annulate but more cinereous beneath than above; prothorax but slightly transverse, only feebly protuberant medially at the sides, finely, sparsely punctate, without trace of the usual four velvety-black spots but with the elongate medial region abruptly and very strongly elevated, shining, subglabrous and sparsely and rather finely punctate; elytra coarsely, not densely punctate, abruptly finely so in the posterior black area. Length (♂) 11.0 mm.; width 4.0 mm. Lower California (San Jose del Cabo),—Fuchs.

elegans Horn

7—Legs black, sometimes feebly and indefinitely piceo-rufous but only from immaturity.....8

Legs partially red; body as a rule much larger in size; antennæ always annulate.....14

8—Post-humeral spot, near the margin, always wanting.....9

Post-humeral spot not only always present, but the largest and peculiarly modified, in being elongate, sometimes confluent with the anterior juxta-sutural spot 13

9—Antennæ without trace of annulation and with the lower fringe reduced to a very few short hairs. Body elongate, convex, rather shining; cinereous vestiture above sparse and scarcely visible, the erect hairs few in number; color rufous, the elytra rather less red; head coarsely, unevenly punctate, with a fine entire subcallous median line, the antennæ dark brown, with brownish vestiture, black basally, the scape rufescent basally; prothorax one-half wider than long, with the lateral prominences strong, the four spots small, piceous; surface very finely, sparsely punctate, the median umbo abruptly and moderately elevated; scutellum black as usual; elytra with moderately coarse and not very close-set, deep punctures, which become rather abruptly much finer and very sparse in nearly inner third; legs subuniformly and slightly picescent, probably from immaturity. Length (♂) 12.0 mm.; width 3.8 mm. California (locality unrecorded) . . . . . **omissus** n. sp.

Antennæ brownish-black, deep black basally, each of the outer joints with a very fine annulus of cinereous hairs. Body small in size, with even and not at all dense cinereous vestiture above and with many erect bristling blackish hairs, the vestiture closer beneath but not very dense, not concealing the integument on the legs, which are somewhat piceous; head finely, not closely punctate, the fine median line blackish; prothorax transverse, obtusely and moderately protuberant at the sides, the four black spots small; punctures fine and sparse, the median tumescent region convex, not abruptly elevated; elytra coarsely, not densely punctate, gradually rather finely so apically; posterior discal spot shading off almost imperceptibly behind. Length (♀) 7.2 mm.; width 2.4 mm. New Mexico . . . . . **quinquemaculatus** Hald.

Antennæ black, strongly annulate with cinereous bands, each formed of a narrow band at the apex of one joint and another at the base of the succeeding joint 10

10—Cinereous vestiture of the upper surface not at all dense and scarcely at all modifying the bright red color of the elytra. Body oblong, convex, shining, bright red, having many long erect black hairs, the under surface clothed densely with cinereous-blue vestiture, the legs all intensely black; head moderately punctate; antennæ black throughout, the long erect hairs beneath moderately numerous, the first three joints bristling with longer blackish and more decumbent cinereous hairs; prothorax transverse, with large rounded lateral prominences, the spots moderate, the two anterior smaller than the posterior; punctures fine and sparse, coarser and closer on the narrow elongate and feebly convex umbo, which is very abruptly elevated; elytra coarsely, rather sparsely punctate, very finely so apically, the spots moderate, unmodified, the apices not darker. Length (♂) 10.0 mm.; width 3.55 mm. Mexico (Colonia Garcia, Chihuahua),—C. H. T. Townsend . . . . . *__nigripes__ n. sp.

Cinereous vestiture above extremely dense, giving a strongly pruinose or

velvety effect, the erect hairs extremely short, cinereous, not distinctly visible in *canescens*, the prothorax with a few stiff erect black hairs at the sides; elytra black at the apices.....11

11—Erect hairs of the elytra distinct by oblique light, though short, the cinereous vestiture everywhere extremely dense, even throughout the median parts of the pronotum, which are glabrous in *canescens*. Body subcylindric, pale reddish-brown; head rather closely cinereo-pubescent, the antennæ densely cinereous beneath throughout, annulate only above, the three basal joints densely cinereous and with erect black bristles; prothorax one-half wider than long, the sides rather abruptly prominent medially, the spots distinct, the umbo somewhat abruptly elevated but not very distinctly and with its sides not rounded but medially angulate and prominent; elytra rather strongly but not closely punctate; under surface and legs very densely cinereo-pubescent. Length (♂) 9.8 mm.; width 3.25 mm. Colorado.....**vestitus** n. sp.

Erect hairs of the elytra excessively short, scarcely discoverable even by oblique illumination; cinereous vestiture nearly wanting on the thoracic umbo; antennæ not cinereous beneath.....12

12—Form less stout, red, the prothorax sometimes black at base or at base and apex; head nearly as in the preceding; antennæ blacker, the three basal joints subsimilarly clothed; prothorax nearly similar in form, the four velvety spots relatively larger, the median region shining, sparsely punctulate, somewhat convex, rather abruptly sloping from its broadly angulate sides and more densely cinereous; elytra with rather more inflated humeri, somewhat strongly but sparsely punctate, densely cinereous throughout, densely cinereous beneath, the legs sometimes faintly and subuniformly rufescent (*annulatus* Lec.), apparently from immaturity. Length (♂♀) 8.5–12.8 mm.; width 3.0–4.3 mm. Texas (El Paso) and New Mexico (Jemez Springs). Very abundant.....**canescens** Lec.

A—Similar to the preceding but a little more slender, much less densely cinereo-pubescent and with the elytra not red but pale yellow-brown; antennæ with the cinereous bands not quite so well defined beneath, owing to some disseminated cinereous hairs; prothorax nearly similar but much less pubescent; elytra narrower, not so inflated basally, with much sparser cinereous vestiture and rather sparser punctures; legs similar. Length (♂) 10.0–10.6 mm.; width 3.4–3.7 mm. New Mexico (Las Vegas Hot Springs),—Snow.....**fontinalis** n. subsp.

Form stouter, the size larger, brownish-red above, densely clothed with cinereous hairs, which however are not quite so dense as in *canescens* and rather sparse at the sides of the elytra from the humeri nearly to the apex; head broadly, feebly concave between the antennæ, which are relatively shorter and stouter than in *canescens*, but otherwise similar above and beneath; prothorax similar, except that the surface medially from side to side is less pubescent, the four spots smaller and the medial convexity more coarsely punctate; elytra less swollen basally, more broadly and obtusely rounded at apex and with the punctures less coarse and much sparser; dense vestiture

of the under surface more whitish and less bluish; fifth ventral (♀) broadly angulate at tip and not transversely truncate as it is in *canescens*, similarly two-thirds longer than the fourth, the erect hairs less blackish, or (♂) barely at all longer than the fourth, with the truncate apex half as wide as the base and much broader than in *canescens*. Length (♂ ♀) 10.0–12.5 mm.; width 3.8–4.7 mm. Utah (Marysvale),—Wickham.....**uteanus** n. sp.

13—Body rather stout, convex, shining, red, the entire under surface, legs and antennæ black; cinereous vestiture above very minute, not dense, the erect hairs moderate and black; antennæ with the first three joints deep black and coarsely, sparsely nigro-pubescent, the remainder brownish-black and clothed very densely with short fuscous pubescence, not at all cinereous basally; prothorax distinctly narrower than the elytra, the lateral prominences strong, the umbo broad, subrhomboidal, rather abruptly formed, the four spots unusually large; elytra oblong, the humeri not tumid; punctures rather strong but sparse, fine apically. Length (♂ ♀) 9.0–14.5 mm.; width 3.2–5.0 mm. New York (Lake Champlain), Pennsylvania to Iowa (Keokuk). [*Lamia tornator* Fabr.].....**tetrophthalmus** Forst.

Body less stout, more parallel, brighter red, rather less shining, the under surface, legs and antennæ nearly as in the preceding; prothorax more transverse and very nearly as wide as the elytra, the central umbo similar but evenly rounded at the sides and less strongly punctured, the spots similar; elytra similarly maculate but with the punctures coarser and more close-set; humeri differing remarkably, being abruptly prominent, rounded and knob-like; under surface grayer. Length (♂) 12.0 mm.; width 4.2 mm. Dakota...**humeralis** n. sp.

14—Four black spots of the pronotum forming a quadrangle which is distinctly wider than long, sometimes strongly transverse and with the two spots on each side connected longitudinally.....15

Four black spots forming a square or very nearly, except in *obsoletus* and *coccineus*, where they form a more transverse rectangle, though with no tendency to unite longitudinally.....18

15—Smaller species, the vestiture of the upper surface only moderately dense and not very conspicuous.....16

Large species, the vestiture above extremely dense, producing a velvety appearance and having (♀) a denuded spot near the apex of each elytron, not visible in the preceding.....17

16—Body stout, convex, the elytra unusually short, bright red above, the under surface and legs black and densely clothed with yellowish-gray pubescence, the femora all red but black at their extreme apices; erect hairs black, long on the prothorax, moderate on the elytra; antennæ (♀) short, three-fourths as long as the body, the first three joints bristling as usual with numerous erect hairs and having some ashy pubescence, the scape partially tinged with red; prothorax transverse, moderately prominent at the sides, the umbo strong, elongate, abruptly formed, with broadly arcuate sides and rather coarse sparse punctures, not impressed; spots very close longitudinally and joined by a black vitta along the sides of the umbo; elytra but little more than one-half longer than wide, all the spots well

developed, except the post-humeral, which is wholly wanting in the type; punctures rather coarse, not dense and not very even in distribution. Length (♀) 13.0 mm.; width 4.8 mm. A single example without designation of locality, but probably from Colorado.

junctus n. sp.

Body much narrower and more elongate, not so bright red, the elytra often yellowish, the erect setæ above black, longer and more conspicuous; antennæ similar; prothorax (♂) similarly transverse, nearly twice as wide as long, almost as in *junctus* throughout, the spots approximate longitudinally and partially joined by black along the umbo, the anterior margin not thickened and convex as it is in *junctus;* basal margin black, or (♀) much less transverse, with the spots not joined; elytra with all four spots well developed, the post-humeral obliquely subquadrate (♂), smaller (♀); punctures coarse, more numerous than in the preceding, similarly very fine apically; sutural angles broadly rounded (♂), more narrowly (♀); vestiture beneath dense, olivaceous; legs deep black, the anterior and middle femora red medially, the former only on the anterior face, the latter on both. Length (♂ ♀) 11.8–12.4 mm.; width 4.4–4.8 mm. New Mexico (Las Vegas),—Snow. . . . . **vegasensis** n. sp.

17—Moderately stout, convex, dull red to brick red, the integument largely concealed by the dense cinereous vestiture almost as in *canescens*, the erect hairs extremely short and cinereous, longer and black on the prothorax; under surface very densely clothed with olivaceous vestiture; all the femora and tibiæ red, the knees and tarsi black, the hind tibiæ obscure in the female; antennæ rather long, black, clothed as in the preceding, the scape generally red, black at apex, but sometimes almost completely black; prothorax (♂) two-thirds wider than long, the quadrangle of spots rather more transverse in the male, the lateral prominences strong, the umbo strong and abrupt, coarsely punctate, with broadly rounded sides; base and apex concolorous; elytra somewhat expanded at the humeri in both sexes, the four spots well developed, the posterior transversely oval, the post-humeral larger than in any other western species, obliquely subquadrate to irregularly oblong, more obscured by the vestiture than any of the others; punctures moderately coarse and rather sparse; the three females have a rounded denuded apical spot not visible in the single male; abdomen unusually protruded behind the elytra in the female. Length (♂ ♀) 14.0–16.8 mm.; width 5.0–6.0 mm. Kansas (Finney and Hamilton Cos.),—Menke and Hunter.

velutinus n. sp.

18—Upper surface densely clothed with cinereous vestiture, giving a strongly pruinose effect. 19

Upper surface much less densely clothed, never giving more than a feebly pruinose effect. 20

19—Body large and very stout, almost as in the preceding but stouter and with the elytra (♀) scarcely at all expanded at the humeri, though evidently so (♂); upper surface dull red, the under surface black, very densely clothed with ashy-gray vestiture, the legs colored as in *velutinus;* erect hairs short, cinereous, rather distinct; antennæ

similar but stouter and a little shorter, the scape red, tipped with black; prothorax nearly as in *velutinus* but much less transverse, with less protuberant sides, the umbo more conspicuous, more strongly and very abruptly elevated, the sides almost straight, its surface more impressed on the median line posteriorly; elytra shorter, the punctures slightly coarser and closer and very much more distinct, the spots similar, except that the post-humeral is always much smaller; abdomen (♀) much less prolonged behind the elytra; coriaceous hind margins of the segments (♂) very much broader than in the preceding, short in the female. Length (♂ ♀) 15.5–16.5 mm.; width 5.8–6.2 mm. Three examples from the Levette collection, without labels but probably taken in Colorado.

robustus n. sp.

Body much smaller, more slender, rather pale brick-red above, the cinereous vestiture not quite so dense, the erect hairs cinereous, very short, scarcely discoverable, longer but palish on the prothorax, the black under surface densely clothed with whitish-cinereous vestiture; femora and tibiæ pale red, the latter sometimes partially black; antennæ as in the preceding but more slender, the scape bright red, tipped with black to black, feebly rufescent medially; prothorax nearly as in the preceding, the very abrupt umbo parallel, very feebly arcuate at the sides and impressed only with a very fine groove at the extreme base; elytra subparallel, only slightly expanded at the humeri, strongly but not very closely punctate, the four spots distinct, the post-humeral subquadrate but not larger than the anterior discal, the posterior as usual blacker and more velvety, transversely oval. Length (♂) 12.7–14.0 mm.; width 4.6–5.0 mm. Kansas,—F. H. Snow. . . . . **brevisetosus** n. sp.

20—Elytra finely and sparsely punctate; post-humeral spot generally obsolete. Pacific coast faunal region. 21

Elytra strongly and more closely punctured. Rocky Mountain region and to the eastward 22

21—Body larger in size, pale red, the elytra pale brownish-yellow, moderately shining, the cinereous vestiture not conspicuous, the erect hairs short, cinereous, the black under surface clothed densely with olivaceous vestiture; femora red, the knees black; tibiæ blackish to evidently rufescent; antennæ rather stout, the fourth joint largely clothed with cinereous as well as the first three, the scape red, tipped with black; prothorax transverse, the lateral prominences strong, more angular than in the Rocky Mountain species, the umbo strongly, very abruptly elevated, its sides parallel, distinctly and evenly arcuate, the median line always impressed basally and sometimes throughout the length, the punctures strong but not approaching the sides of the umbo; elytra oblong, with unusually fine and very sparse punctures throughout, the anterior juxta-sutural spot well developed, oval, slightly transverse, the posterior large, slightly transverse, oval, the post-humeral very small in the type and wholly wanting in the other two examples; tarsi rather broad, the second joint of the posterior not quite as long as wide and only feebly,

arcuately narrowed from apex to base. Length (♀) 15.0–16.0 mm.; width 5.7–6.0 mm. California (locality not recorded).

sublævis n. sp.

Body much smaller, strongly shining, deeper and bright red, the under surface densely clothed with very fine slaty-blue hairs; legs black, the femora all red, the knees black; vestiture above very fine, cinereous and inconspicuous, the erect black hairs rather long and distinct; antennæ short, three-fourths as long as the body, black, the annulations very much narrower than usual as in the preceding, the three basal joints with but few cinereous hairs, the scape rufous, tipped with black to gradually black almost from the base; prothorax distinctly wider than long and arcuate at apex, the lateral prominences very moderate and broadly obtuse, the umbo abruptly, moderately elevated, with evenly arcuate sides and strong scattered punctures, the median line not only without vestige of impression but, as a remarkable exception, tumid at base; elytra short, but little more than one-half longer than wide, the punctures distinct and moderately sparse, much stronger than in the preceding, the spots moderate, the post-humeral always wanting; male with the fifth ventral slightly longer than the fourth, its apex unusually deeply sinuate medially, or (♀) much longer than the fourth, with the apex truncate medially; female of the two type specimens much smaller than the male. Length (♂♀) 10.5–12.0 mm.; width 3.7–4.7 mm. California (Siskiyou Co.),—Koebele.....**obsoletus** n. sp.

Body nearly similar but more elongate, with longer though otherwise similar antennæ and different male sexual characters, similar in coloration, sculpture and vestiture above but beneath having the dense vestiture paler, more ashy and notably longer and coarser; prothorax and elytra nearly similar in sculpture, shining lustre and maculation; male with the fifth ventral segment but just visibly longer than the fourth, with its apex feebly sinuato-truncate, the truncature about half as wide as the base; tarsi larger and longer, the basal joint especially much longer and, on the anterior, more inflated. Length (♂) 12.0–12.6 mm.; width 4.5–4.7 mm. California (without indication of locality).....**coccineus** n. sp.

22—Vestiture of the under surface cinereous to ochreo-cinereous; upper surface generally pale red to yellowish-red.....23

Vestiture beneath cinereous-blue to deep slaty-blue; upper surface generally deep red, the body stouter and larger.....25

23—Thoracic umbo broadly and deeply impressed in almost basal half. Body strongly convex, rather shining, pale red, the cinereous vestiture above not at all conspicuous, the erect hairs rather short, cinereous; antennæ black, rather thick, not quite as long as the body, strongly annulate, the basal joint bright red; prothorax moderately transverse and protuberant at the sides, the umbo very strongly elevated and extremely abrupt, flattened above and coarsely punctate; elytra oblong, the four black spots distinct, subequal among themselves, the punctures unusually coarse, deep and rather close-set, fine but distinct apically; under surface black, densely clothed with coarse ochreo-cinereous vestiture, the fifth segment (♂) not longer

than the fourth, broadly truncate medially at apex; legs red, the tarsi rufo-piceous, the hind tibiæ infuscate basally, the knees throughout dark. Length (♂) 13.8 mm.; width 5.2 mm. Texas.

punctipennis n. sp.

Thoracic umbo not at all impressed or only very finely and feebly at the posterior end.....24

24—Elytra shorter, not more than three-fourths longer than wide. Bright brick-red in color, the entire under surface of the hind body and anterior coxæ deep black; legs red, the knees black, the two anterior tibiæ at base and apex, the posterior wholly, black, the tarsi black but with reddish-pubescent soles; cinereous pubescence of the upper surface feeble and inconspicuous, of the under moderately dense and somewhat fusco-cinereous; erect hairs long, numerous and black; head sparsely punctate; antennæ black, annulate, nearly as long as the body (♂), the scape red, black at apex; prothorax one-half wider than long, the lateral prominences strong, rounded, the umbo rather narrow, with feebly arcuate sides, strongly and abruptly elevated, sparsely and not very coarsely punctate; elytra strongly but not closely punctate, the spots distinct, the post-humeral occasionally wanting. Length (♂♀) 11.0–12.8 mm.; width 4.0–4.8 mm. New Mexico (Fort Wingate),—Shufeldt. . .**atrisetosus** n. sp.

Elytra longer, about twice as long as wide, more obscure red, the cinereous hairs of the upper surface more numerous, giving a moderate bloom, the erect hairs rather short, in great part cinereous; under surface black, densely clothed with rather coarse olivaceo-cinereous pubescence; legs black, the femora red, the two anterior tibiæ also sometimes in great part rufous; head less sparsely punctate; antennæ nearly similar, except that the scape is black, rufescent medially above; prothorax a little more transverse, the strong lateral prominences more narrowly rounded, the umbo a little broader, with more arcuate sides and coarser and more numerous punctures; basal margin black throughout the width; elytra coarsely, rather closely punctate, more closely medially except toward the suture, the four spots well developed. Length (♂) 13.0 mm.; width 4.8 mm. Colorado.....**femoratus** Lec.

A—Similar but still more slender in form and with the punctures less coarse and not so close-set, the erect hairs a little longer, cinereous; antennæ similar but notably shorter, much shorter than the body; prothorax nearly similar, the base blackish only at the sides; legs entirely black, all the femora red; under surface similar. Length (♂♀) 11.8–12.3 mm.; width 4.2–4.5 mm. Iowa (Keokuk).

amnicola n. subsp.

B—Smaller, still more slender and not quite so convex, the punctures less coarse than in *femoratus* and decidedly sparser, the erect hairs much longer, fuscous and cinereous; antennæ as in *amnicola;* prothorax similar, except that the lateral prominences are not so strong and much more broadly rounded, the umbo similarly very strongly and abruptly elevated but limited behind by a more distinct transverse sulcus; base feebly nigrescent at the sides; pubescence of the under surface finer and shorter than in the two

preceding and bluish-cinereous, somewhat as in the three following species. Length (♀) 11.8 mm.; width 3.8 mm. Utah.
monticola n. subsp.

25—Under surface of the body red, excepting the median parts of the metasternum and the abdomen, which are black or blackish, the met-episterna always red. Body moderately stout, shining, bright red, the cinereous hairs of the upper surface very inconspicuous, the erect hairs rather long, cinereous, black basally and on the prothorax; dense vestiture of the under surface coarse and bluish-cinereous; legs red, the tarsi black; head coarsely, sparsely punctate, the antennæ annulate, black and not quite as long as the body (♂), the scape red; prothorax transverse, with strong and broadly rounded lateral prominences, the umbo rather narrow, very strongly and abruptly elevated, sparsely punctate; elytra moderately elongate, slightly swollen at the humeri, coarsely, rather closely punctate, the spots moderate in size, the post-humeral generally obsolete. Length (♂) 13.0–14.0 mm.; width 5.0–5.2 mm. Arizona (southern). Levette collection. Three similar examples.....**ruber** n. sp.

Under surface of the entire hind body deep black.....26

26—Form moderately stout, shining, deep red, the vestiture above very feeble and indistinct, beneath slaty-blue; erect hairs rather long, stiff, black; legs black, the femora and generally the first two tibiæ red; antennæ rather long and heavy, the scape red; prothorax nearly as in the preceding; elytra with rather coarse but somewhat distant punctures, the spots relatively rather small, the post-humeral generally wholly wanting; anterior and middle tarsi (♂) with the basal joint much more dilated than that of the posterior, the middle tarsi nearly as long as the tibiæ; male with the fifth ventral slightly longer than the fourth, the apex broadly truncate medially; upper and lower flat horizontal plates of the intromittent organ broad, parallel sided, abruptly and rapidly, arcuately narrowed at apex and acutely produced medially for a short distance, the two plates subsimilar in form and rather closely applied. Length (♂♀) 11.2–14.6 mm.; width 4.0–5.5 mm. Arizona (Oak Creek Cañon),—F. H. Snow.....**spissicornis** n. sp.

Form stout, larger, broadly convex, similar in coloration and vestiture; antennæ rather long and thick, similarly annulate and with the basal joint red; head coarsely, not closely punctate; prothorax nearly as in the preceding, the very strongly elevated and extremely abrupt umbo parallel, with its sides evenly and barely visibly arcuate, coarsely punctate except toward its lateral edges and defined at base by a fine deep transverse groove; elytra coarsely, very evenly but not very closely punctate, the spots all present but small, except the posterior, which is well developed; surface with the feebly pruinose covering of cinereous hairs removed in a small spot near the apices as in *velutinus*. Length (♀) 17.5 mm.; width 6.5 mm. Mexico (Durango City),—Wickham.....***fortis** n. sp.

Elegans Horn, is the most aberrant of our species in the absence of the four pronotal spots and very strongly elevated and extremely

abrupt shining thoracic umbo, but its derivation from the *discoideus* type is sufficiently evident. I am uncertain whether the example described above as *quinquemaculatus* Hald., really represents that species, as there is a very fine feeble antennal annulation—perhaps overlooked by LeConte; the size is much smaller, though this is not at all significant in view of the very great variation in size characterizing most of the species, but the locality is far removed from that of the type of the species, which is said by LeConte to be Sault St. Marie, Michigan. I have omitted *texanus* Horn, not having seen a specimen; it is said to be allied to *quinquemaculatus* but with red scape and femora; without much doubt it is a valid species, not at all closely allied to *quinquemaculatus* but rather to be associated with the *femoratus* group, the gradually formed thoracic umbo not being a character of so great value as supposed, considering the diversity of this part in the *discoideus* group, which, as shown by other more general features, is a perfectly natural section of the genus. *Mancus* Lec., should come in the table immediately after *omissus*, from which it differs in its annulate antennæ. It is probable that *collaris* Horn, which I have not seen but which is very aberrant in the opaque thoracic umbo, would be best placed in the *femoratus* group and near that species in the table; it is from New Mexico. *Oregonensis* and *basalis* of LeConte, may be placed at the end of the table as requiring further study; the first, at least, is certainly not represented in my material, and it is improbable that either *ruber*, *atrisetosus* or *spissicornis*, the only available ones in this connection, can be the same as *basalis*, because of the very strong and abruptly elevated thoracic umbo. *Humeralis* is unique in the genus by reason of the very remarkable abruptly tumid black elytral humeri, which, even if aberrational in the single type, would not invalidate the species, as the prothorax is much broader and more transverse and the head larger than in *tetrophthalmus;* it is also more parallel and very much more strongly punctured than *tetrophthalmus* Forst.* Western examples of the latter species are a little larger, more elongate and more punc-

*I here follow LeConte in writing *tetrophthalmus* and not *tetraophthalmus*, as given by Horn and followed by Bates. Specific words can be altered to accord with etymological usage, which however is not the case with generic words, the latter being unalterable.

tate as a rule than those from the coast regions, though otherwise nearly similar; they form, in fact, a very well marked variety of *tetrophthalmus*, which may be designated subspecies **iowensis** nov.

Tetrops Kirby.

The small species of this genus are individually rather rare in collections. They are allied to *Tetraopes* in general organization but are narrower and more cylindric, the prothorax biconstricted but only very feebly and broadly prominent at the sides, the elytral punctures relatively coarser, denser and subserial and the antennal joints beyond the fourth abruptly abbreviated; they also have some affinity with *Oberea* of the preceding tribe. My two representatives of *canescens* Lec., are from Kansas, and the single example of *jucunda* Lec., from Pennsylvania. *Monostigma* Hald., having the legs red, I have not seen. The following is allied to *jucunda*, but can readily be distinguished as stated below:

Tetrops expurgata n. sp.—Form nearly as in *jucunda* and with nearly similar fuscous vestiture and erect hairs, black, shining, the head and prothorax throughout bright red, the latter without trace of dark central maculation; legs and antennæ black, the joints of the latter beyond the fourth abruptly much abbreviated and pale brown in color throughout; head finely, sparsely punctate, broadly and feebly concave between the antennal tubercles; prothorax a fourth wider than long, parallel, the basal constriction deep and confusedly punctate, the apical shallower, the central callus feeble, only evident behind the anterior constriction and with a few punctures, the surface elsewhere impunctate except in the basal constriction; apical margin notably thickened; scutellum small, triangular, with very few fine punctures; elytra shining, with series of coarse oval perforate punctures, confused though only slightly smaller apically, the sculpture as in *Oberea;* abdomen shining, sparsely punctulate and hairy; legs short and slender. Length (♀) 7.7 mm.; width 2.2 mm. Indiana. Levette collection.

Differs from *jucunda* in its slightly stouter form, coloration of the antennæ, the joints beyond the fourth in that species, as well as *canescens*, being black or blackish, with only their extreme bases paler, in the shorter and less punctate, wholly immaculate pronotum and in the coarser and less close-set elytral punctures, the interspaces being more shining, owing to the much less evident, or in fact barely traceable, fine subgranular sculpture of *jucunda*.

The genus *Phœa* of Newman, is closely related to *Tetrops* and bears a still greater resemblance in sculpture to *Oberea*, the antennæ

being as in that genus though shorter, the joints beyond the fourth not being abbreviated; it differs from *Tetrops* also in the irregularly, longitudinally bisulcate and very differently biconstricted prothorax, at least as shown in my series of *Phœa vitticollis* Bates.

NOTES.

Mem. Col., III, pp. 344–345—*Tylosis bifasciata* Csy., should be advanced to specific rank and *conjuncta* and *parva* Csy., united therewith as slight modifications, scarcely worthy of separate names. All the other species described seem to be valid.

Mem. Col., III, p. 355—On page 384 of his recent catalogue, M. Aurivillius has placed *Cyllene chara* Say, as a modification of *decora* Oliv.; this is decidedly wrong; it is not a variety but an amply valid species. The author has nevertheless given names to the variations of *chara* indicated by G. H. Horn; of these *horni* Auriv. is typical *chara*, which was misidentified by Horn on the plate referred to, as can be seen readily by consulting Say's original description, where it is stated that the elytra are solidly yellow in basal third. The *mediana* of Aurivillius is the same as *solida* Csy., and of course takes precedence of the latter name because of priority. *Arhopalus lutosus* Lec., cannot be any modification of *chara* or *decora*, though it is unknown to me at present. As for *brevipennis* Lec., I am inclined to think that the remarkable protrusion of the abdomen in the type is accidental, and that the name may refer to an extremely immature male of *Xylotrechus obliteratus*.

Mem. Col., III, p. 365—I have recently received from Prof. Cockerell the male of *Xylotrechus obliteratus;* the elytra have the markings partially obliterated by a uniform suffused clothing of pale hairs, as in the males of *insignis* and *incongruens*. *Diruptus* Csy., should be united with *insignis;* the differences appear too slight to warrant even the status of a subspecies. A male of *Xylotrechus salebrosus*, also recently received, is shorter and with much more rapidly cuneiform elytra and shorter legs than the male of *cylindrus*, and proves that the two species are distinct.

Mem. Col., III, p. 374—The name *Paraclytus* is preoccupied by Bates and may be replaced by **Triodoclytus** (nom. nov.).

Mem. Col., IV, p. 327—The example from the Catskill Mts., referred to *cryptica*, does not belong to that species but to *variolata*.

In all the numerous representatives of the latter, the large posterior spot extends to and is truncated by the lateral carina, while in *cryptica* it is always isolated and rounded,—apparently a trivial character but notably constant.

Mem. Col., IV, p. 331—Some time after the matter relating to *Graphisurus pusillus* had been put in type I discovered by chance that reference had been made to this subject by Mr. Schaeffer (Ent. News, 1902, p. 236), whereby it seems that it was, even at that time, the opinion of Mr. Leng that the true *pusillus* of Kirby was the species so identified by myself, as cited above. That we should have arrived at the same result by independent routes tends at any rate to be confirmatory, and if Mr. Leng had also determined that our so-called *Acanthocinus* should, as a consequence, be known henceforth under the name *Graphisurus*, he would have still more fully expressed the reality in my opinion.

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